Pacific Salmon Commission

2012/2013 Twenty Eighth Annual Report

Pacific Salmon Commission

Established by Treaty between Canada and the United States March 18, 1985 for the conservation, management and optimum production of Pacific salmon

Twenty Eighth Annual Report 2012/2013

Vancouver, B.C.
Canada

November 2014

PACIFIC SALMON COMMISSION

ESTABLISHED BY TREATY BETWEEN CANADA
AND THE UNITED STATES OF AMERICA
MARCH 18, 1985

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Letter of Transmittal

In compliance with Article II, Paragraph 14 of the Treaty between the Government of Canada and the Government of the United States of America concerning Pacific salmon (the Treaty), it is my pleasure as Executive Secretary of the Pacific Salmon Commission to present my compliments to the Parties and to transmit the Twenty Eighth Annual Report of the Commission.

This report summarizes the activities of the Commission for the fiscal year April 1, 2012 to March 31, 2013. It reports on the results of the 2012 fishing season and on meetings of the Commission and its subsidiary bodies. Also included are the annual reports of the Northern and Southern Fund Committees, and an independent auditor's report on financial activities of the Commission during the fiscal year April 1, 2012 to March 31, 2013

Additional details about the Commission's activities and the Treaty are available at www.psc.org.

Sincerely,

John Field

Mr. John Field
Executive Secretary

PACIFIC SALMON COMMISSION

OFFICERS for 2012/2013

Chair	Ms. Susan Farlinger
Vice-Chair	Mr. David Bedford

COMMISSIONERS

Canada	United States
Mr. Bob Rezansoff	Mr. Ron Allen
Mr. Brian Assu	Mr. Phil Anderson
Mr. Paul Macgillivray	Mr. Larry Rutter
Dr. Brian Riddell	Mr. William Auger
Mr. Paul Sprout	Mr. Roy Elicker
	Mr. McCoy Oatman

SECRETARIAT STAFF

Executive Secretary	Mr. Don Kowal (Retired September 30, 2012) Mr. John Field (as of August 6, 2012)
Administrative Officer	Mr. Ken Medlock
Chief Biologist	Mr. Mike Lapointe

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INTRODUCTION

Since the early 20th century, Canada and the United States have discussed and collaborated on Pacific salmon conservation and management. Interception of Pacific salmon bound for rivers of one country in fisheries of the other has been a particularly important issue over the years. Scientific research identified a number of intercepting fisheries on species and stocks originating from Alaska, British Columbia, Washington, Oregon and Idaho. This research indicated that Alaskan fishers were catching some of the salmon bound for British Columbia, Idaho, Oregon and Washington. Canadian fishers off the West Coast of Vancouver Island were capturing some of the salmon bound for rivers of Washington and Oregon, while fishers in northern British Columbia were intercepting certain fish returning to Alaska, Washington, Oregon and Idaho. U.S. fishers were catching Fraser River salmon as they traveled through the Strait of Juan de Fuca and the San Juan Islands towards the Fraser River.

Cooperative management of stocks subject to interception became a matter of common concern to Canada and the United States, and governments desired a mechanism to enable each country to reap the benefits of its respective management and enhancement efforts. That mechanism is now provided through the *Treaty Between the Government of Canada and the Government of the United States of American Concerning Pacific Salmon* (hereafter the "Pacific Salmon Treaty" or "the Treaty"), which entered into force upon the exchange of instruments of ratification by the President of the United States of America and the Prime Minister of Canada on March 18, 1985.

The treaty, *inter alia*, established (i) a bilateral fishery management organization known as the Pacific Salmon Commission (the Commission), and (ii) bilateral fishery management regimes for conservation and harvest sharing of salmon stocks. Each country (Party) retains jurisdictional management authority but must manage its fisheries in a manner consistent with the provisions of the Treaty. The Treaty is intended to enable bilateral conservation and enhancement to prevent overfishing, increase production, and ensure that each country receives benefits equivalent to its own salmon production. The Commission also serves as a forum for consultation between the Parties on their salmonid enhancement operations and research programs.

The Commission comprises four Commissioners (and alternates) from each country as the principle deliberative body. The Commission has also established numerous subsidiary committees, and four geographically oriented panels. The Panels report to the Commission and provide advice on the conservation and management of selected stocks of concern, with certain exceptions as noted below:

Transboundary Panel: stocks originating from the Alsek, Stikine and Taku River systems.

Northern Panel: stocks originating in rivers situated between Cape Suckling in Alaska and Cape Caution in British Columbia.

Southern Panel: stocks originating in rivers located south of Cape Caution, other than Fraser River sockeye and pink salmon.

Fraser River Panel: has special in-season regulatory responsibilities for stocks of sockeye and pink salmon originating from the Fraser River.

Yukon River Panel: makes recommendations to authorities in Alaska and the Canadian government concerning the conservation and coordinated management of salmon originating in the Yukon River in Canada, but does not report to the Commission.

The panels review annual post-season reports, annual pre-season fishing plans and ongoing and planned salmonid enhancement programs of each country. They also provide recommendations to the Commission for development of fishery regimes in accordance with the objectives of the Treaty. These

regimes once adopted by the Commission and accepted by the Parties, are implemented by the relevant fishery management agencies in each country.

The Parties accord the Fraser River Panel special responsibility for in-season regulation of Fraser River sockeye and pink fisheries of Canada and the United States in southern British Columbia and northern Puget Sound, in an area designated as Fraser River Panel Area Waters. Scientific and technical work is conducted for the Panel by the Fishery Management Division of the Commission's Secretariat staff.

With long-term fishery arrangements in place through periodic amendment of the Treaty, the meeting agendas for the Commission have concentrated on implementation that will improve fisheries management and aid the countries' efforts to recover weakened stocks. These processes include establishment of two bilaterally-managed conservation and enhancement funds, provisions to enhance bilateral cooperation, and improvements in the scientific basis for salmon management.

The Commission generally meets three times annually and conducts its business between meetings through its permanent Secretariat located in Vancouver, British Columbia. In the period April 1, 2012 to March 31, 2013, the Commission met on four occasions:

1. Commission Executive Session
   April 12, 2012 – Via Teleconference

2. Fall Session
   October 16-17, 2012 – Vancouver, B.C.

3. Post-Season Meeting of the Commission and Panels
   January 19-20, 2013 – Vancouver, B.C.

4. Twenty-Eighth Annual Meeting of the Commission
   February 11-15, 2013 – Portland, Oregon

This, the Twenty-Eighth Annual Report of the Pacific Salmon Commission, provides a synopsis of the activities of the Commission and its subsidiary bodies during its Twenty-eighth Annual year of operation, April 1, 2012 to March 31, 2013.

Activities of the Commission

[illegible]

The Commission discussed and approved a set of questions developed by PRIG to be distributed to appropriate subsidiary bodies by the Secretariat. The answers to the questions would come back to the Commission in January 2013. At the February 2013 Annual Meeting, the Commission would be prepared to make final decisions about how to implement the Consultants' recommendations.

The Commission discussed the PSC hydroacoustics program. Mr. Mike Lapointe, PSC Chief Biologist, explained that significant improvements were made to the program over the years but as a result the program became more complex and costly to operate.

The Commission agreed that Secretariat staff would draft a short policy guidance document summarizing the evolution and major issues surrounding the PSC hydroacoustics program. The Commission agreed that the Canadian Section would draft Terms of Reference for a small group of Commissioners, and advisors as appropriate, to consider the policy guidance document and report to the Commission on its findings.

The Commission held a discussion about the financial challenges facing the Parties and their ability to fund their obligations under the Treaty.

The Commission discussed the renegotiation of Annex IV, Chapter 4 (Fraser River Sockeye and Pink Salmon), which had been delayed until the Cohen Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River released its final report, rescheduled for October 29, 2012. The Commission agreed that the Fraser River Panel should begin to renegotiate the Fraser Chapter and approved instructions about how the negotiations would proceed.

The Commission accepted as submitted the work plans of the Fraser River Panel, Fraser River Technical Committee, Northern Panel, Northern Boundary Technical Committee, Transboundary Panel, Transboundary Technical Committee, Chinook Technical Committee, Selective Fishery Evaluation Committee, Data Sharing Technical Committee, Sentinel Stocks Committee, and the Committee on Scientific Cooperation.

The Commission accepted the work plans of the Southern Panel, the Coho Technical Committee and the Chum Technical Committee but offered no comment on the work plans' appendices.

The Commission discussed the work plan submitted by the Habitat and Restoration Technical Committee (HRTC). Because most Commissioners had not yet had the opportunity to read a draft report recently issued by the HRTC, the work plan was not approved but was tabled for discussion in January 2013.

The Commission adopted instructions to Panels and Committees.

C. MEETING OF THE COMMISSION AND PANELS
January 14-18, 2013, Vancouver, B.C.

The Commission met five times in bilateral session during the week.

Newly appointed U.S. Commissioner Mr. William Auger was welcomed to the Commission table.

The Commission received an update from the Performance Review Implementation Group (PRIG).

Members of PRIG had met with the PSC Secretariat staff, the Fraser River Panel, Fraser River Technical Committee, and the chairs of the Chinook Technical Committee to discuss recommendations contained in

the 09 Solutions Report. The PRIG assigned Ms. Allison Webb of the Canadian Section and Mr. David Cantillon of the U.S. Section to meet with and gather feedback from the Commission's other Panels and Committees. The PRIG intended to collate comments received from the Panels, Committees, and the Secretariat staff into a report to be presented to the Commission in February 2013.

The Commission agreed that the Performance Review Implementation Group (PRIG) would submit a final report to the Commission prior to the February 2013 Annual Meeting. The Commission would develop an action plan in response to the PRIG report with appropriate input from the National Sections.

The Parties tabled their post-season fishing reports.

Commissioner Dr. Riddell and Mr. Michael Schmidt of Long Live the Kings reported on the Salish Sea Marine Survival Research Planning Workshop that was held in November 2012. One of the main workshop recommendations was that any research program should be a joint U.S./Canada program. Dr. Riddell and Mr. Schmidt were developing a research plan and looking for sources of funding.

Commissioner Macgillivray reported that the Cohen Commission final report was submitted to the Government of Canada in October 2012. There was nothing in the Cohen Report that had to be considered before a new Annex IV, Chapter 4 was negotiated. Therefore, the Canadian Section was authorized to proceed with the negotiation of a long-term Fraser River Chapter.

The Commission received an update from Mr. Barry Rosenberger and Ms. Lorraine Loomis, Chair and Vice Chair of the Fraser River Panel about the renewal of the Fraser River Chapter. The Commission was provided with a table that listed seven issues under negotiation. Panel members planned to agree upon draft language during the February 2013 session, which would allow sufficient time for both Parties to hold domestic consultations so that the agreement could be finalized before the 2013 fishing season.

The Commission discussed a draft proposal tabled by Canada entitled "Terms of Reference for the Strategic Review Committee on In-River Assessment of Fraser River Sockeye and Pink (Hydroacoustics)". The Commission agreed that the U.S. Section would provide a response to the draft terms of reference at the February 2013 Annual Meeting.

PSC Chief Biologist Mike Lapointe presented a draft document to the Commission that was intended to help inform the Commissioners about the issues surrounding the hydroacoustic program located at Mission, B.C. A team of four people from Canada and three from the United States reviewed the document. The paper included a section containing a cost-benefit analysis of the program, a section about potential future uses of the hydroacoustics program at Qualark, and a section about species composition.

The Commission received an update from the Chinook Interface Group (CIG). The CIG met with the Chinook Technical Committee (CTC) co-chairs a number of times during the week to discuss several issues including a request to help the CTC prioritize its list of assignments and a memo about the CTC's progress on its precautionary management assignment.

The Commission discussed the next steps that would be taken regarding the Habitat Restoration Technical Committee (HRTC). The Commissioners had the opportunity to read the HRTC technical report submitted in October 2012. The Commission discussed the value of the HRTC report to the PSC process.

The Commission agreed to discuss the Habitat and Restoration Technical Committee work plan at the February 2013 Annual Meeting.

The Commission received progress reports on work plans from the Southern Panel, Northern Panel, Transboundary Panel, Fraser River Panel, Chinook Technical Committee, Selective Fishery Evaluation Committee, Sentinel Stocks Committee, and Coded-Wire Tag Implementation Team.

D. PACIFIC SALMON COMMISSION ANNUAL MEETING
February 11-15, 2013, Portland, Oregon

The Commission met five times in bilateral session during the week.

Ms. Farlinger announced that Canadian Commissioner Chief Russ Jones was retiring from the Commission. She outlined his contributions to the Commission process and thanked him for his service.

Executive Secretary Mr. John Field reminded the Commission that 2013 marked the 100th anniversary of the rock slides at Hell's Gate and a century of cooperation between Canada and the United States on Fraser River salmon management. The Secretariat planned to hold a small ceremony at Hell's Gate during the upcoming summer to commemorate the anniversary.

Mr. Macgillivray presented a report from Canada about the Chinook Fishery Mitigation Program, Annex IV, Chapter 3, paragraph 4, describing the program and Canada's consultation process. Canada agreed to provide the Commission with status reports as the program proceeded.

Dr. David Hankin, Vice Chair of the Committee on Scientific Cooperation (CSC) reported on the Committee's activities.

The Committee recommended that a workshop be held to review the current status and future of the Coded Wire Tag program. The Commission agreed that the CSC should work with the Coded Wire Tag Implementation Team to develop and submit a proposal for workshop funding to the Endowment Fund Committees.

The Commission agreed with that CSC's recommendation that the Commission support the development of a three-day intensive workshop, to be led by PSC Quantitative Biologist Dr. Catherine Michielsens, on the application of modern Bayesian modeling and statistical analysis for salmon stocks under the Pacific Salmon Treaty.

The Commission discussed and accepted the recommendations put forth by the Performance Review Implementation Group (PRIG) in the "Summary of Commission Actions Resulting from the 2012 Performance Review". The recommendations were categorized into seven subject areas: meeting management, orientation of Commission members, rules and procedures, forward planning, financial management, communication, and additional support to Panels and Technical Committees.

The Commission agreed that the Secretariat and National Sections would appoint participants to execute the tasks involved in carrying out the recommendations and that the PRIG would be dissolved.

The Commission accepted the Chinook Interface Group's recommendation that the Chinook Technical Committee (CTC) be directed to continue to work on its draft precautionary management memo and to identify and describe areas of differing perspectives held by Committee members.

Mr. Angus MacKay, Endowment Fund Coordinator, presented the "Annual Report of the Southern Boundary Restoration and Enhancement Fund and the Northern Boundary and Transboundary Rivers Restoration and Enhancement Fund for the year 2012." The report included a section on the

administration of the Yukon River Panel Restoration and Enhancement Fund for which the PSC staff took responsibility in March 2011.

The Commission discussed and approved Terms of Reference for the Fraser Strategic Review Committee (FSRC) on In-River Assessment of Fraser River Sockeye and Pink Salmon. The Commission agreed that the Parties would appoint participants to serve on the Committee and that the Committee would subsequently develop a workplan.

Fraser River Panel members Mr. Barry Rosenberger and Ms. Lorraine Loomis presented draft Annex 4, Chapter, Fraser River Sockeye and Pink Salmon renewed language agreed upon by the bilateral Fraser River Panel.

The Commission agreed to endorse the draft text for a revised Annex IV, Chapter 4 for domestic consultation processes. The Commission planned to have the Agreement finalized and entered into force by January 1, 2014.

The Commission adopted the report of the Standing Committee on Finance and Administration in which the Committee recommended that the Commission approve the proposed budget for the 2013/2014 fiscal year, adopt amendments to financial regulations, and authorize the Secretariat to collaborate with Fisheries and Oceans Canada to administer an expanded test fishery program in 2013 on a trial basis.

The Commission received progress reports on workplans from the Fraser River Panel, the Northern Panel, the Southern Panel, the Transboundary Panel, the Coded Wire Tag Improvement Team, the Sentinel Stocks Committee, and the Selective Fishery Evaluation Technical Committee.

Activities of the Standing Committees

PART II
ACTIVITIES OF THE STANDING COMMITTEES

A. MEETINGS OF THE STANDING COMMITTEE ON FINANCE AND ADMINISTRATION

1. Committee Activities

The Committee met on December 11, 2012, three times at the Post-Season meeting (January 14, 16 and 18, 2013; Vancouver), and three times at the 28th Annual Meeting (February 11, 12 and 13, 2013; Portland).

During the course of these meetings, the Committee addressed a number of issues including proposed and forecast budgets, the Commission's financial rules, staff rules, succession planning, test fishing, and Secretariat administrative workload.

Financial regulation changes

In reviewing the Secretariat's budget proposals, the Committee noted that current and forecast economic conditions are constraining government revenues and expenditures. Members noted their governments' desires for predictability and stability in the Commission budget over the near- and long-term.

It was agreed that full and effective Secretariat operations to support Treaty implementation must be maintained while seeking fiscal prudence within the Commission's budget. The Committee highlighted the importance of giving the Executive Secretary adequate flexibility within a fiscal year to expend surpluses, generate savings, and transfer funds as appropriate. The Committee also agreed that increased costs, expanded Secretariat duties, inflation, and unforeseen circumstances could erode budget flexibility and increase expenses in future years. The Executive Secretary confirmed that a forthcoming Secretariat operational plan will help identify future needs and budget changes for the Commission's consideration.

Therefore, the Committee has advised the Executive Secretary:

1. In developing budget proposals, the equivalent priorities should be:
    a. delivery of Secretariat services as described in the Treaty, Commission Bylaws, and related documents;
    b. predictable and stable national contributions; and
    c. Secretariat discretion for expending any unallocated funds (carryover) from the previous fiscal year as allowed by the Financial Regulations, capital asset replacement plans, and other relevant Commission policy.
2. When the Executive Secretary estimates that income from proposed national contributions and other sources will be insufficient to deliver required Secretariat services in a given budget, s/he may submit supplementary requests as part of the given budget proposal that:
    a. Identify the specific purpose(s) of the budget augmentation and its duration;
    b. Explain why other sources of income or savings are unavailable to fund the item(s);
    c. Describe ramifications if the extra funding is not provided.

The Committee worked to implement this approach in the FY2013/2014 proposed budget and the FY2014/2015 forecast budget. However, the proposed FY2013/2014 budget required a Commission decision to amend the Financial Regulations to permit a carryover of savings from the current fiscal year.

The Committee recommended that the Commission amend its Financial Regulations to clarify the scope and purpose of the Working Capital Fund and update other portions of the regulations. The Commission approved the Committee's recommended amendments.

Proposed FY2013/2014 and forecast FY2014/2015 budgets

Key components of the proposed and forecast budget are listed below:

1. FY2013/2014:
    a. Party contributions have not increased since FY2011/2012, remaining constant at $1.88M;
    b. Planned expenditures will be reduced in the last two months of the current fiscal year (2012/2013), thus increasing the estimated carryover to $477,699 on April 1, 2013;
    c. The Executive Secretary removed $84,000 in line item expenditures from his original FY2013/2014 budget proposal that should not impede critical program delivery;
    d. The Executive Secretary imposed a general 5% reduction to his proposed FY2013/2014 budget (excluding permanent salaries and benefits);
    e. The steps above create a planned net carryover for $245,853 by March 31, 2014 for transfer to the Working Capital Fund.

2. FY2014/2015:
    a. Party contributions would remain constant at $1.88M;
    b. $245,853 will be withdrawn from the Working Capital Fund as income to supplement Party contributions;
    c. The Executive Secretary reduced his original forecast 2014/2015 budget by a combination of specific line item removals and a 7% general reduction across all categories except permanent salaries and benefits.

The Commission adopted the FY2013/2014 budget as proposed by the Committee (Appendix D). The FY2014/2015 forecast budget was provided for the Commission's information and required no action. These budgets excluded any test fishing program costs apart from permanent salaries and benefits.

Test fishing

Changes to Canadian law in 2012 enabled the sale of fish as a means to recover test fishing costs. From 2007 to 2012, the domestic judicial "Larocque decision" constrained the use of fish to support test fishing in Canada and held implications for Secretariat operations.

The Committee considered a Canadian proposal for the Secretariat to:

a) continue administering test fishing for Fraser River sockeye and pink salmon as per the Treaty and related agreements;
b) continue its 2007-2012 practice of administering Canadian test fisheries beyond Fraser Panel waters; and
c) assume administration of two additional Canadian test fisheries.

The Committee recommended and the Commission authorized the Secretariat to collaborate with Fisheries and Oceans Canada to administer an expanded salmon test fishing program for 2013 on a trial

basis. The Secretariat staff was directed report to the Committee in December 2013 on any advantages and challenges encountered in this trial and, based on this review, the Committee will recommend a future course of action to the Commission at the January 2014 Post-Season meeting.

Grant administration

The Committee reviewed a report from the Secretariat on its grant administration duties and the associated workload issues (Appendix E). That report suggests the Commission should consider establishing a policy for recovering the costs associated with certain administrative duties. Further work is needed to develop a specific proposal, including the rates and mechanisms that would be most appropriate reflecting the workload and time involved in particular types of projects. Funds obtained through such fees would be used to offset the Secretariat's associated direct and indirect costs for this work.

The Secretariat planned to continue to discuss these matters with the Standing Committee on Finance and Administration in 2013 and propose a course of action at the appropriate time.

Meeting schedule

The Committee reviewed the PSC Meeting Schedule and confirmed the schedule and locations through the February 10-14, 2014 annual meeting. Dates and locations for 2015 meetings have been reserved.

2. Secretariat Staffing Activities

A list of Secretariat staff employees as of March 31, 2013 is presented in Appendix F.

An updated membership list for panels, standing committees, joint technical committees and ad hoc working groups as of March 31, 2013 is presented in Appendix G.

B. MEETINGS OF THE STANDING COMMITTEE ON SCIENTIFIC COOPERATION

The 2012 Terms of Reference for the Committee on Scientific Cooperation (CSC) call explicitly for interaction between members of the CSC and Co-Chairs of Technical Committees. Three members of the Committee on Scientific Cooperation (Hankin (US), Saunders (CA), and Wertheimer (US)) met with Co-Chairs from all Technical Committees, except for the Transboundary Technical Committee, at the January 2013 meeting in Vancouver. The purpose of these meetings was to (a) solicit advice concerning *development of a process* whereby Technical Committee Co-Chairs might most effectively assist the CSC in the identification of science issues that might benefit from CSC involvement, (b) *develop a list of issues* or concerns that seem of special interest to Technical Committee Co-Chairs, and (c) *identify a smaller set of issues* that might benefit from CSC scrutiny or involvement. CSC members had additional discussions with the PSC Executive Secretary John Field and other PSC staff, and with Cheryl Ryder, US Section Coordinator.

There was strong agreement among Technical Committee Co-Chairs that it was not necessary to hold an annual meeting of Co-Chairs and CSC members to achieve the objective of relaying science issues and concerns to the CSC. Nevertheless, it was apparent that there was benefit from face-to-face discussions and the CSC recommended that a large group meeting of CSC members with all Technical Committee Co-Chairs be held every three years at the January meeting.

A recommendation that met with substantial support among Technical Committee Co-Chairs was to add a new item to annual work plans developed by Technical Committees and Panels where the Technical Committees could list items of possible concern for CSC consideration. Work plans could then be reviewed by the CSC so that the CSC would be aware of issues of concern to specific Committees or Panels, and could identify which of these issues were of concern to multiple groups.

Members of the CSC agreed that three specific areas could benefit from their involvement:

- Re-examination of the status and future of the coded wire tag recovery program, intended to promote cost-efficiencies and to identify sources of funding to maintain the integrity and function of the program so long as it remains the best approach for estimation of fishery impacts on individual stocks of chinook and coho salmon.

- Assisting the Technical Committee Co-Chairs and/or specific identified individuals within Technical Committees in developing skills necessary to apply modern Bayesian modeling and statistical analysis methods to assessments of stock status and development of management strategies.

- Contributing to a better understanding of the oceanographic drivers of primary and secondary production in the North Pacific Ocean and the links between biological productivity and abundance, growth and survival of Pacific salmon species from Japan, Russia, United States and Canada.

The CSC proposes that CSC involvement in the above areas would be best accomplished by the following near-term and longer-term activities:

Near-term Activities

- Development of a concept proposal - for submission to the Northern and/or Southern Funds in August 2013 for a focused workshop on the CWT recovery program, to be held during 2014 or 2015, the final year of United States Annex IV funding. The development of the structure and format of the proposal and its submission would be a collaborative effort of the CSC and members of the CWTIT (Coded-Wire Tag Improvement Team). This same collaborative group would also develop the full proposal if the concept proposal were approved.

- Development of a proposal for a three-day intensive workshop (for about 30 participants) on application of modern Bayesian modeling and statistical methods for assessment of salmon stocks under the Pacific Salmon Treaty. The format and structure for this workshop and identification of appropriate participants would be determined collaboratively by a steering committee consisting of members of the CSC, Dr. Catherine Michielsens (Bayesian statistician, Pacific Salmon Commission Secretariat) and PSC Technical Committee members with suitable background and expressing interest in service on the steering committee. The steering committee would explore mechanisms for funding the workshop so that it could occur in late 2013/ early 2014.

Longer-Term Activities

- The CSC proposes to begin discussions with the NPAFC on improving communication, information exchange, and scientific collaboration. These discussions should initially focus on how best to approach the very broad issue of productivity in the North Pacific Ocean as it affects

abundance, distribution, growth and survival of juvenile and immature salmon originating from throughout the North Pacific.

- Assist the PSC in development of a strategic science agenda.

The CSC requests the following actions from the Commission:

1. Addition of a new item to annual NC work plans, titled 'Issues for Possible CSC Consideration' (or some equally appropriate name).
2. A vote of support for the CSC to proceed with development of proposals that would support the two near-term activities identified above.
3. A vote of support to initiate discussions between the CSC and Secretariat staff regarding the longer-term activities identified above.

[redacted]

The Northern and Southern Fund Committees have agreed that given the congruent nature of their agendas and their decision to combine the funds into a single master account for investment management purposes, and the efficiencies involved with respect to interaction with the fund managers, it was appropriate to meet together as a Joint Fund Committee at least once a year for an annual financial review and investment manager interviews. The Joint Fund Committee met in person once, on November 7th and 8th, 2012.

Mr. Chris Kaminky of Ann Hewett opened the meeting by giving a brief background presentation on the Fund's investment portfolio for the benefit of the new Committee members. In so doing he turned to the recently updated and revised Statement of Investment Policies and Procedures which describes the Fund's investment beliefs and objectives. The Committee as a whole agreed that an annual review of the SIPP would be valuable.

Mr. Kaminky then presented the Third Quarter report for 2012. There was some discussion on the format and content of the report. Mr. Kaminky explained that Ann Hewett would shortly be changing the format of the Quarterly reports. Committee members described the reports of the report they found most helpful and Mr. Kaminky committed to be flexible and to work together with the Committee to customize the report's format where possible.

The Committee then heard in-person presentations from the Fund's EAFE manager LSV Asset Management and the new real estate manager Invesco. The new infrastructure manager RARE presented their report via teleconference from Australia. The Committee were generally satisfied with the managers' reports.

For the balance of the day, Mr. Kaminky and the Committee analyzed the performance of the Fund's global value manager Brandes. The discussion covered particular developments with the firm and more general issues pertaining to value-style investing.

On November 8th the Fund Committee heard an in-person presentation from Brandes and a lengthy discussion followed. The outcome was to instruct Mr. Kaminky to report back to the Committee in May with an analysis of the value manager universe setting the attributes of Brandes in context with its peers, a retrospective report on the history of Brandes' relationship with the Fund, and a review of the present portfolio.

At the final agenda item of the meeting Secretariat staff made presentations to the Committee on the organizational structure of the Secretariat and the future allocation of time and sources of funds that support Fund program personnel. There was also an in-depth review of Fund administrative expenditures.

Northern Fund Committee Meetings

The Northern Fund Committee met four times during 20[illegible]:

May 1st, 20[illegible]

- Fund performance and Q1 20[illegible] review. Committee members questioned the performance of the Fund's value managers LSV and more particularly, Brandes. The Fund's investment consultant Mr. Chris Kranicke advised the Committee that we have placed our value managers on a "buy" and a "hold" respectively. Committee members requested an analysis of Brandes' performance against its peers.
- Alternative asset classes update and discussion.
- Revisions to the Statement of Investment Policies and Procedures.
- Spending Policy Review. The Fund's investment consultant Mr. Chris Cranicke suggested three alternative strategies to address the effects of changing capital market conditions since the spending policy was first developed. The Committee accepted this advice but no decision to change the spending policy was made.
- Outlook for 20[illegible] project funding.

June 20th, 20[illegible] (by teleconference):

- On-going project status and review for 20[illegible].

October 12th, 20[illegible]:

- Financial projections and date of receipt.
- First round selection of project concepts to be invited to proceed to stage two.

November 9th, 20[illegible]:
Spending policy and alternative approaches.

Southern Fund Committee Meetings

The Southern Fund Committee met three times during 20[illegible]:

May 1st, 20[illegible]

- Fund performance and Q1 20[illegible] review.
- Alternative asset classes update and discussion.
- Revisions to the Statement of Investment Policies and Procedures.
- Spending Policy Review. The Fund's investment consultant Mr. Chris Kranicke suggested three alternative strategies to address the effects of changing capital market conditions since the spending policy was first developed. The assumed annual return of 9.5% and since the spending policy was developed would be considered optimistic today and 6.5% would be more realistic. Responding to this new reality, one strategy would be to move the maximum spending rate down from 5.5% to 4%. This recommendation was approved by the Fund Committee and the spending policy was amended accordingly.
- Outlook for 20[illegible] project funding. Potential for a focused Call for Proposals directed towards priorities identified by the Southern and Outer West Panels.

[redacted]

Activities of the Panels

[illegible]

Chairs on 2015 Stikine and Taku Enhancement Production Plans. The Panel also engaged in discussions regarding the outstanding need to achieve a bilaterally agreed-upon MSY escapement goal for coho salmon in the Taku River watershed, received a presentation on and discussed approaches to accounting for removals in test fisheries, the anticipated weak return of Taku River Chinook salmon in 2015 and associated conservation concerns, as well as a presentation on the current status of genetic stock identification in each of the transboundary watersheds.

Review of 2012 Fisheries and Treaty-Related Performance

PART IV
REVIEW OF 2012 FISHERIES AND TREATY-RELATED PERFORMANCE

The following review has been drawn from a number of reports prepared by Commission staff, joint technical committees, and domestic agencies for presentation to the Commission. Source documents are referenced for each part of this review. All figures are preliminary and will be updated in future reports as more complete tabulations become available.

A. FRASER RIVER SOCKEYE SALMON

Pre-season Planning

1. Expectations were for a median run size (p50 level) of 2,119,000 Fraser River sockeye salmon, assuming a long-term model performance scenario.

2. Raft-North Thompson and Harrison stocks were managed as part of the Summer-run aggregate in 2012.

3. Expectations of migration parameters included a 43% diversion rate for Fraser River sockeye salmon through Johnstone Strait, except for Harrison sockeye for which a 21% diversion rate was employed. Expected Area 20 50% migration dates were June 29 for Early Stuart, July 16 for Early Summer, August 1 for Summer and August 11 for Late-run sockeye.

4. Pre-season spawning escapement goals were 52,000 Early Stuart, 166,000 Early Summer, 651,000 Summer and 158,000 Late-run sockeye for a total of 1,027,000 adult spawners. The goals for each sockeye management group were established by applying Canada's Spawning Escapement Plan to the forecasted run sizes.

5. Management Adjustments (MAs) of 101,000 Early Stuart, 53,000 Early Summer and 39,000 Summer-run sockeye were added to the spawning escapement targets to increase the likelihood of achieving the targets. These MAs were based on relationships between river conditions (discharge and temperature) and historical differences between lower and upriver escapement estimates. The MA for the total Summer run (including Harrison) was calculated from a weighted average of a fixed Harrison pMA (0.35) and the forecasted pMA (0.04) for the remaining run.

6. For Late-run sockeye, the Panel assumed a continuation of early upstream migration behavior and associated high mortality that has occurred since 1996. Given pre-season assumptions about marine timing and recent delay behavior, the median upstream migration date for Late-run sockeye in 2012 was expected to occur during the third week of August. Given this timing and the expected difference between estimates, no directed harvest of Late-run sockeye was planned. However, some limited bycatch of Late-run sockeye was anticipated in fisheries directed at other Fraser sockeye management groups with harvestable surpluses. If the return of Late-run sockeye was less than the 75% probability level forecast (304,000 fish), the by-catch of Late-run sockeye was to be limited to a maximum exploitation rate of 20%, and if the Late-run return was equal to or greater than the 75% probability level forecast, the maximum exploitation rate was to be 30%.

7. The projected Total Allowable Catch (TAC) of Fraser River sockeye salmon based on the median forecasted abundances and agreed deductions was 558,000 sockeye, of which 16.5% (92,000 sockeye) were allocated to the United States (U.S.).

8. Pre-season model runs indicated it was unlikely the Summer-run TAC could be fully harvested due to fisheries constraints required to achieve spawning escapement targets for co-migrating Early Summer and Late-run stocks.

9. The Panel adopted the Principles and Constraints and the 2012 Regulations.

In-season Management Considerations

10. Compared to pre-season expectations, the observed marine migration timing was 5 days later for Early Stuart sockeye, 6 days earlier for Late-run stocks, and the same for Early Summer and Summer-run stocks.

11. The overall Johnstone Strait diversion rate for Fraser sockeye was 23%, compared to 43% forecasted pre-season.

12. The total return of 2,224,000 adult Fraser sockeye exceeded the median pre-season forecast (2,119,000 fish) by a small margin. Returns of Early Stuart, Early Summer and Late-run sockeye exceeded their forecasts by 65-92%, but Summer-run returns were 21% less than the forecast.

13. Fraser River discharge was much higher than average through July and August and river temperatures were higher than average through August and September. In-season management adjustments consequently exceeded pre-season expectations for Early Stuart and Early Summer-run groups, but were similar to pre-season values for Summer-run sockeye. The in-season Late-run MA was also larger because they migrated into the river 10 days earlier than expected, however, there was no consequence for in-season actions because management was based on a 20% maximum exploitation rate limit.

14. The preliminary estimate of the total return of adult Fraser sockeye was 2,224,000 fish, 29% higher than the brood year abundance of 1,719,000 adults in 2008. Divided into management groups, adult returns totalled 185,000 Early Stuart, 530,000 Early Summer, 1,249,000 Summer and 260,000 Late-run sockeye. This return of Early Stuart sockeye was the largest on the 2012 cycle since 2000. Returns of the remaining management groups were within the ranges observed in recent cycle years. These preliminary estimates will be updated when run size adjustments and Alaska catches have been finalized.

15. Catches of Fraser River sockeye salmon in all fisheries totalled 656,000 fish, including 510,000 fish caught by Canada, 111,000 fish caught by the U.S. and 34,000 fish caught by test fisheries. Most of the Canadian catch occurred in First Nations fisheries (508,000 fish). In Washington, commercial catches totalled 105,000 Fraser sockeye, mostly caught in Treaty Indian fisheries (73,000 fish). The overall harvest rate was 29% of the run, which is within the range observed since the mid 1990s. (Note: A small Alaska catch of Fraser sockeye has not yet been incorporated in the estimates).

16. DFO's near-final estimates of spawning escapement to streams in the Fraser River watershed totalled 919,000 adult sockeye. This was about 16% higher than the brood year escapement of 795,000 adults. Spawning escapements for all management groups were within the ranges observed in recent cycle years. There were 365,000 effective female spawners in the Fraser watershed, representing an overall spawning success of 71%. However, spawning success for Birkenhead sockeye (16%) was the lowest

on record. The remaining management groups had spawning success rates that were similar to or slightly lower than recent years.

Achievement of Objectives

17. In order of descending priority, the goals of the Panel are to achieve the targets for spawning escapement, international sharing of the TAC and domestic catch allocation.

18. In-season management decisions are based on targets for spawning escapement, which are represented in-season by potential spawning escapement targets (i.e., spawning escapement targets plus MAs). In-season estimates of potential escapement (i.e., Mission escapement minus catch above Mission) were close to the targets for Early Stuart (5% under) and Summer-run sockeye (4% over), higher than the target for Early Summer sockeye (43% over), and less than the target for Late-run sockeye (18% under).

19. Post-season spawning ground estimates of Fraser sockeye abundance totalled 919,000 adults, which is 23% below the post-season target. Spawner abundance was severely below the target for Early Stuart (65% under) and Late-run sockeye (77% under), exceeded the target for Early Summer stocks (25% over) and was slightly lower than the target for Late-run stocks (13% under). The shortfalls For Early Stuart and Late runs are mainly due to the large DBEs for these groups (-85% and -71%, respectively). With DBEs of this magnitude, run sizes of these management groups would have to be much larger than observed to achieve the escapement targets. The preliminary estimate of Late-run exploitation rate was 19%, slightly less than the maximum allowable value of 20%.

20. The TAC (Total Allowable Catch) of Fraser sockeye was 410,000 fish, based on the calculation method set out in Annex IV, Chapter 4 of the Pacific Salmon Treaty and the February 17, 2011 Commission Guidance. The Washington catch of 111,000 Fraser sockeye was 44,000 fish more than their 16.5% share. Similarly, the total Canadian catch of 510,000 Fraser sockeye was 232,000 fish less than their in-season catch goal (83.5% of TAC + 400,000 fish AFE). In these calculations, the TAC is fixed on the date that Panel control of the last U.S. Panel Area was relinquished (September 2 in 2012), while catches are post-season estimates.

21. In terms of domestic allocation objectives for Fraser sockeye, Treaty Indian fishers were 33,000 fish over and All Citizen fishers were 10,500 fish over their shares of the U.S. TAC. There is no domestic allocation to report for Canadian commercial fisheries in 2012.

22. By-catches of non-Fraser sockeye and pink salmon in commercial net fisheries regulated by the Fraser River Panel totalled 80 sockeye and zero pink salmon. Catches of other Fraser and non-Fraser salmon species included 1,700 chinook, 2,800 coho, 120 chum and 10 steelhead.

Allocation Status

23. There are no paybacks of Fraser River sockeye or pink salmon to carry forward to 2013. In 2012, the U.S. exceeded its share of the international TAC as calculated on the day that Panel control of the last U.S. fishery area was relinquished (September 2), however, the TAC had decreased after the last decision about U.S. fisheries (August 10). Thus, in accordance with the Treaty and Commission Guidance, the TAC in effect on August 10 was used to determine allocation status. Using this method the U.S. caught less than their share and so there was no payback of Fraser sockeye salmon to carry forward to the 2013 fishing season.

B. 2012 POST-SEASON REPORT FOR UNITED STATES SALMON FISHERIES OF RELEVANCE TO THE PACIFIC SALMON COMMISSION

Northern Boundary Area Fisheries

District 104 Purse Seine Fishery

The 2009 Pacific Salmon Treaty (PST) Agreement calls for abundance based management of the District 104 purse seine fishery. The agreement allows the District 104 purse seine fishery to harvest 2.45 percent of the Annual Allowable Harvest (AAH) of Nass and Skeena sockeye prior to Alaska Department of Fish and Game (ADFG) statistical week 31 (referred to as the treaty period). The AAH is calculated as the total run of Nass and Skeena sockeye salmon minus either the escapement requirement of 1.1 million (200,000 Nass and 900,000 Skeena) or the actual in-river escapement, whichever is less.

The District 104 purse seine fishery opens the first Sunday in July; in 2012 the initial opening was July 1 (Week 27). The pre-Week 31 fishing plan for District 104 was based on the preseason Canadian Dept. of Fisheries and Oceans (DFO) forecast returns of approximately 1,846,000 Nass and Skeena sockeye salmon.

In the 2012 treaty period (Alaska statistical weeks 27-30), 18,300 sockeye were harvested in the following: one 12-hour openings in Week 27; one 15-hour openings in Week 28; two 15-hour openings in Week 29; and two 15-hour openings in Week 30 (Table 1). A total of 30 purse seine vessels fished at some time in the district during the treaty period. In past years 60% to 80% of treaty-period sockeye have been of Nass and Skeena origin. Thus, we would anticipate that between 11,000 and 14,600 Nass and Skeena sockeye may have been harvested in the District 104 purse seine fishery during the treaty period. The final number of Nass and Skeena sockeye harvested, and the actual catch by stock, will not be available until catch, escapement, and stock composition estimates are finalized for the year.

Table 1. Catch and effort in the Alaska District 104 purse seine fishery, 2012.

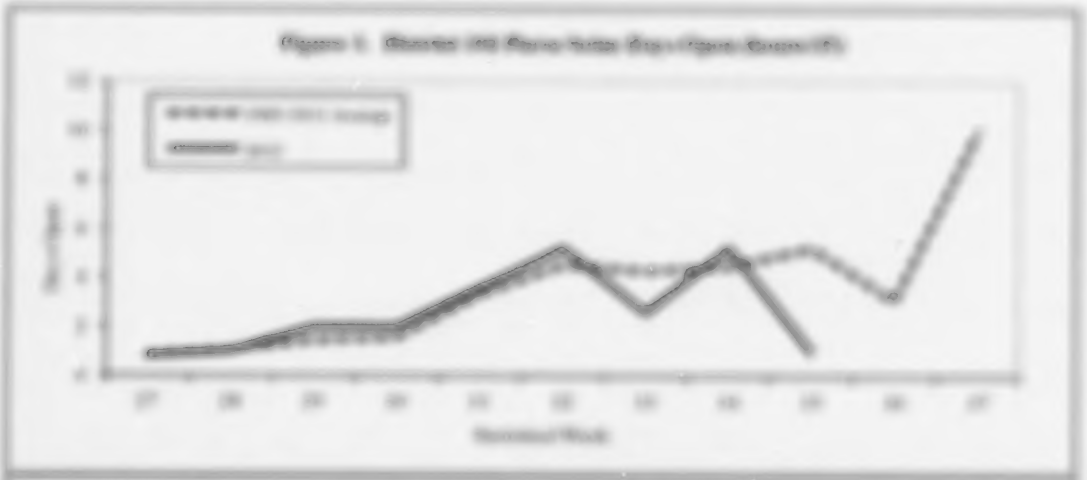
Week/ Opening	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours
27	7/1	0	372	230	418	3,826	3	12
28	7/8	0	1,504	1,771	2,516	16,047	9	15
29	7/15	0	6,117	1,220	19,561	7,211	7	15
29B	7/19	0	2,371	1,650	9,365	5,335	19	15
30	7/22	0	4,951	5,484	56,540	13,301	17	15
30B	7/26	0	2,985	5,458	89,665	8,195	11	15
31	7/29	0	3,478	10,317	214,277	14,043	29	15
31B	8/2	0	4,706	10,926	410,986	23,318	41	39
32	8/6	706	9,970	7,614	842,167	19,503	31	39
32B	8/10	906	16,758	14,973	1,336,631	39,622	54	39
33	8/14	539	10,664	14,388	1,715,445	54,323	98	39
33B	8/18	724	6,600	13,550	893,161	43,742	77	39
34	8/22	79	1,318	2,372	172,737	6,806	31	39
35	8/26	73	599	3,073	29,974	2,770	13	15
Weeks 27-30		0	18,300	15,813	178,065	53,915	30	87
Weeks 31-35		3,027	54,093	77,213	5,615,388	204,127	118	264
Total		3,027	72,393	93,026	5,793,453	258,042	119	351

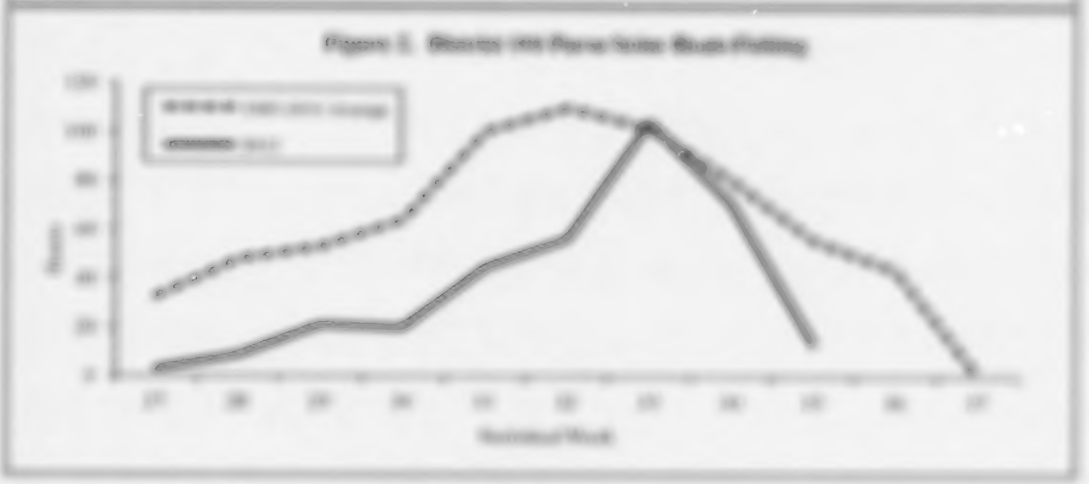
Since the Pacific Salmon Treaty was signed in 1985, the number of hours open, boats fishing and boat-days fished in the pre-Week 31 annex period in District 104 are down 54%, 60% and 84% respectively compared to the averages in the pre-treaty 1980-1984 period (Table 2). The total pre-Week 31 Treaty-period sockeye harvest is also down 44%. The seine fleet moves freely between districts as various species are harvested, so seining opportunities elsewhere affect the effort and catch in District 104.

Table 2. Fishing opportunity, effort, and sockeye harvest prior to week 31 in the District 104 purse seine fishery, 1980-2012.

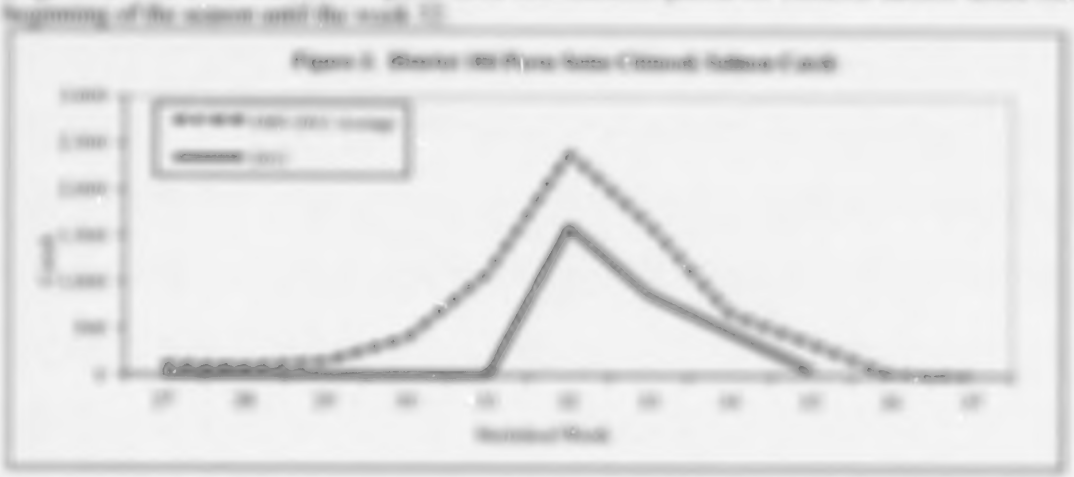
Year	Hours Fished	Boats Fishing	Fraction Days Fished (1st=15hrs)	Boat-Days Fished (Fraction Boats and Fraction Days)	Sockeye Harvest	Sockeye Catch per Boat-Day
1980	207	244	13.8	2,877	366,275	93
1981	132	232	8.8	1,168	185,188	167
1982	117	255	7.8	1,435	213,150	149
1983	108	241	7.2	1,211	170,306	141
1984	132	174	8.8	869	163,319	128
1985	84	141	5.6	562	100,940	180
1986	108	194	7.2	968	91,320	94
1987	90	134	6	457	72,385	158
1988	108	230	7.2	994	248,789	250
1989	84	135	5.6	438	157,566	360
1990	42	171	2.8	276	169,943	615
1991	41	134	2.7	243	98,583	406
1992	29	108	1.9	142	79,647	561
1993	45	171	3	343	163,189	476
1994	55	84	3.7	202	158,524	783
1995	58	109	3.9	218	71,376	328
1996	31	113	2.1	128	215,144	1,684
1997	96	159	3.7	409	572,942	1,402
1998	32	78	2.1	89	17,394	196
1999	30	38	2	44	7,664	174
2000	81	66	5.4	192	48,969	255
2001	90	95	3.3	182	203,090	1,115
2002	72	44	4.8	124	26,556	215
2003	52	69	3.5	97	84,742	875
2004	107	24	7.1	102	30,758	302
2005	68	38	4.5	93	35,686	382
2006	95	39	6.3	117	89,615	766
2007	50	68	3.3	136	112,135	824
2008	33	17	2.2	22	6,262	281
2009	72	38	4.8	95	15,971	168
2010	55	21	3.7	39	4,617	118
2011	84	29	5.6	77	25,280	329
2012	75	30	5.8	93	18,300	196
Avg. 80-84	139	225	9	1,667	187,647	126
Avg. 85-12	64	99	4	244	104,537	483
% Change	-54%	-60%	-54%	-84%	-44%	284%

In the 2012 season, the District 104 purse seine fishery harvested 5,795,451 pink salmon, 72,393 sockeye, 258,042 chum, 93,026 coho, and 3,027 Chinook salmon. Catches of all salmon species were below average throughout the season. The number of days that the fishery was open was about the treaty period (1985-2011) average except for weeks 33 and 35 when days open to fishing were below average (Figure 1). The number of boats fishing was below average throughout the season except for about average in week 33 (Figure 2).





Chinook salmon catches in the District 104 purse seine fishery were below average throughout the season (Figure 3). The 2012 District 104 purse seine non-retention period for Chinook salmon lasted from the beginning of the season until the week 32.



[illegible] salmon catches were below average throughout the season (Figure 4). The lowest period record (34,454 sockeye catch was 16,339 while the total catch was 72,343).

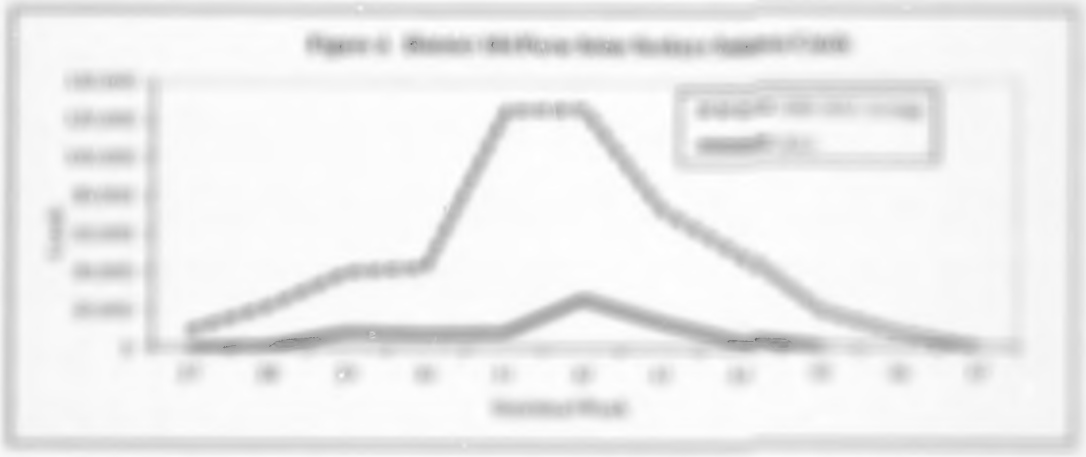


Figure 4: [illegible]

Catches of coho salmon were below average early, near average mid-season, and below average later in the season (Figure 5).

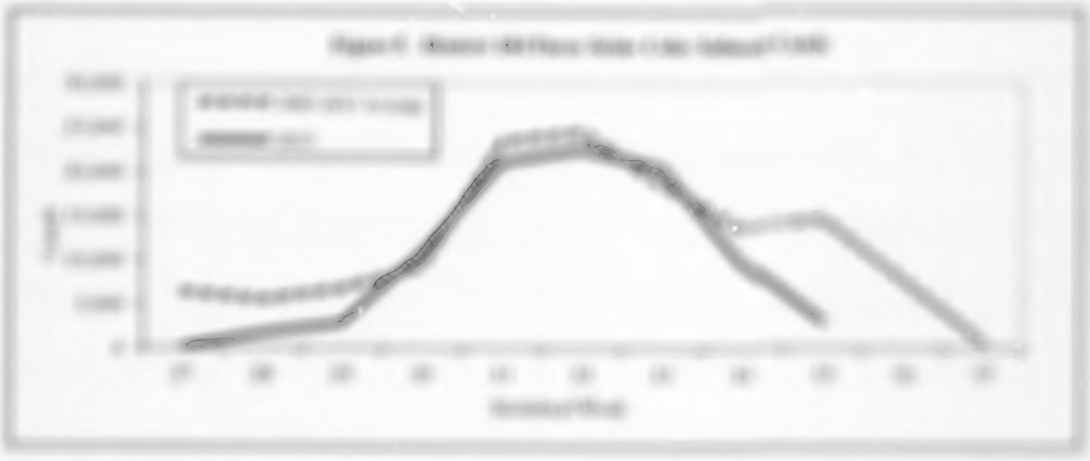
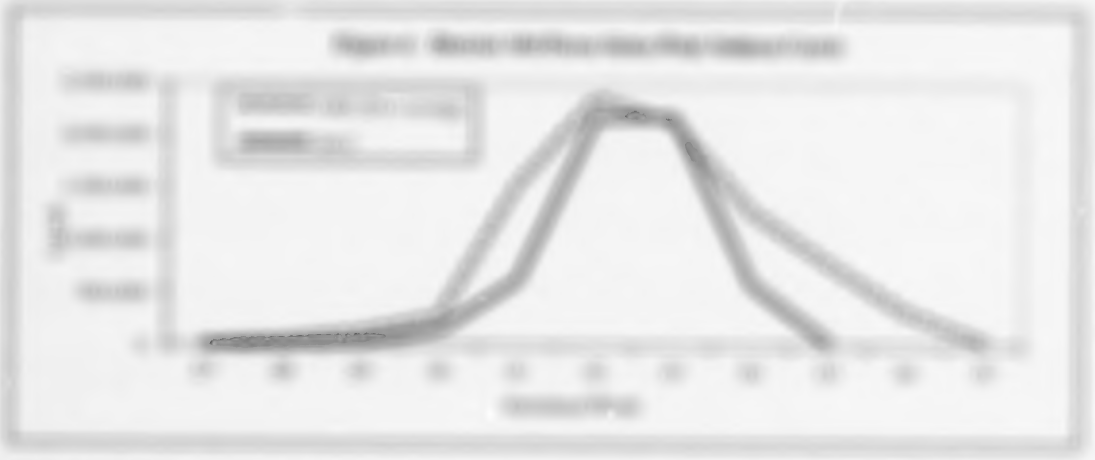
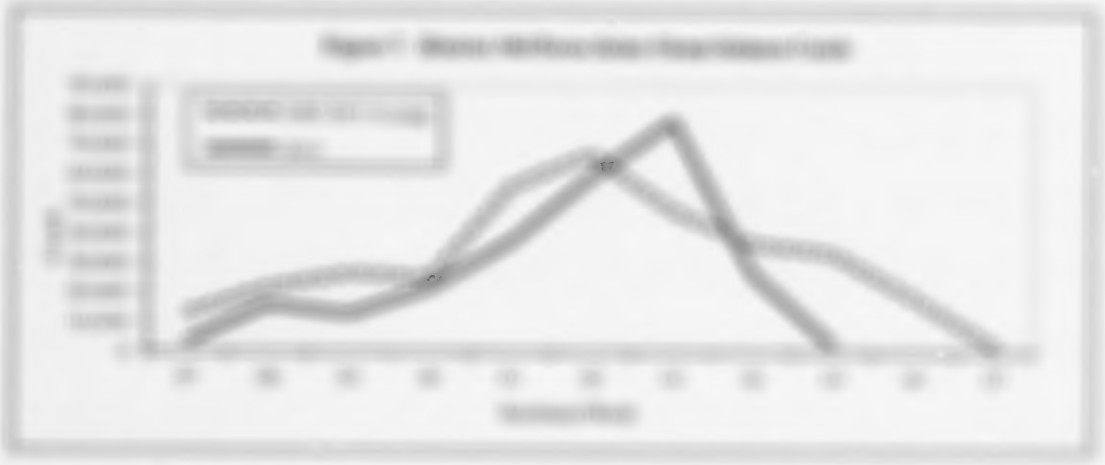


Figure 5: [illegible]

Pink salmon catches were below average most of the season (Figure 6).





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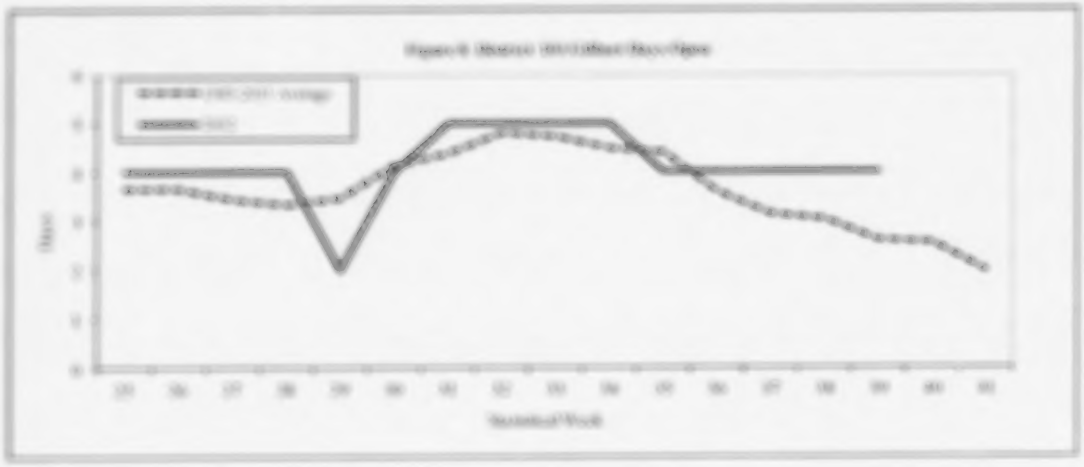
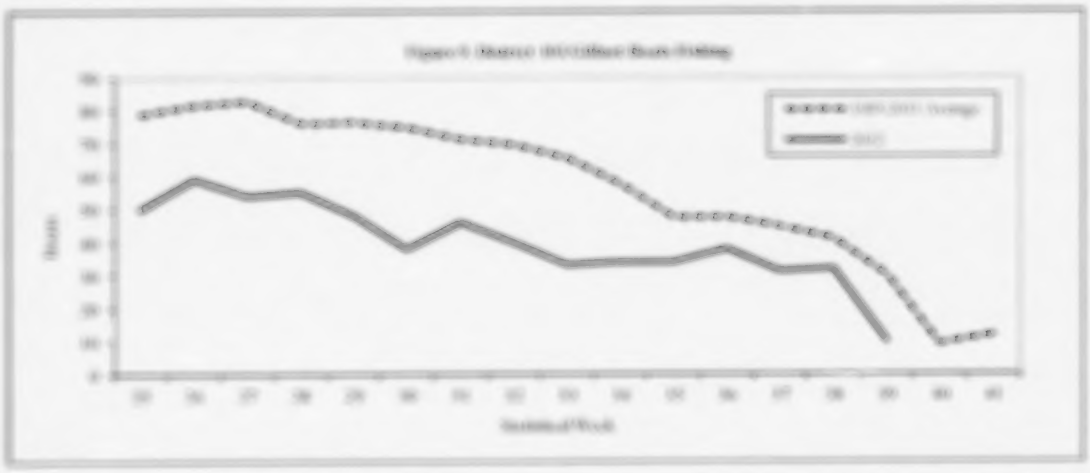
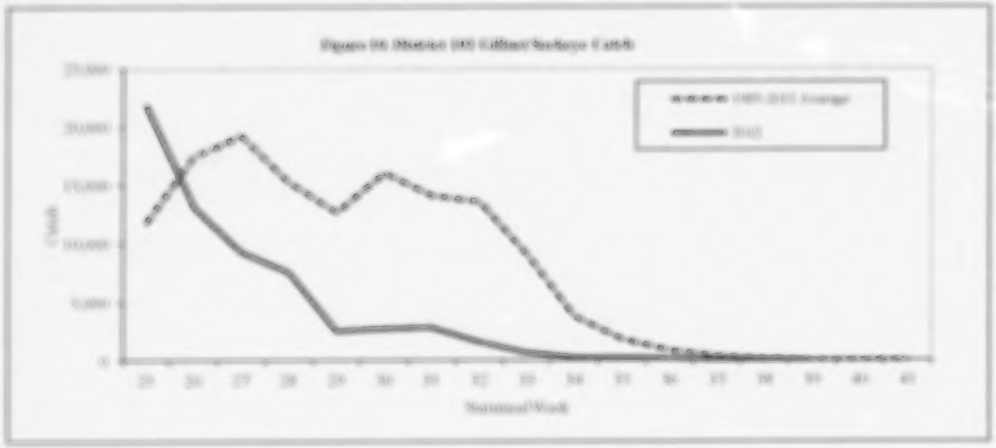
The number of days the fishery was open was slightly above average most of the season (Fig. 8).



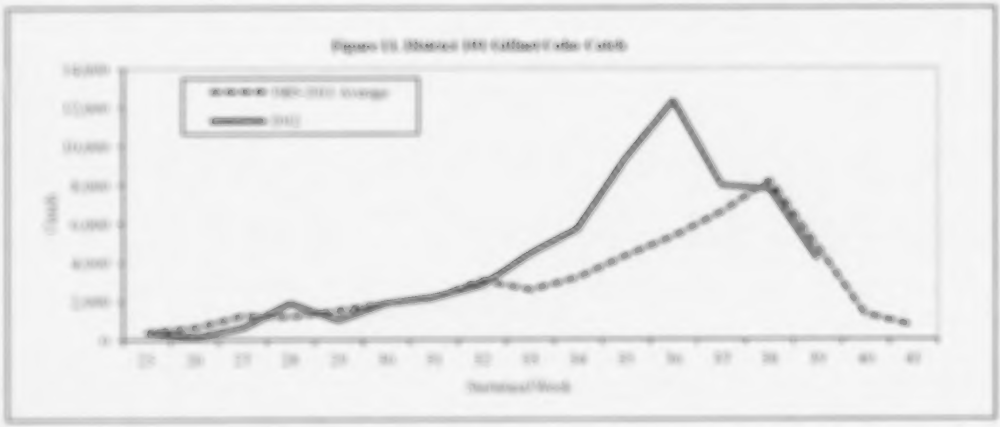
The number of boats fishing during weekly openings remains below average. (Figure 9).



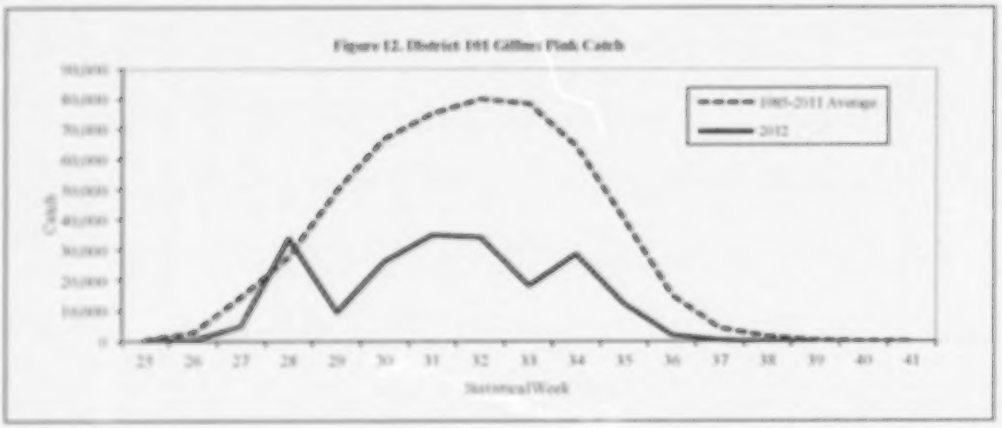
Except for the initial week, catches of sockeye were below treaty period averages for the season (Figure 10). Sockeye harvest prior to the initiation of the Pink Salmon Management Plan in Week 29 was 51,800 fish, or about 87% of the total.



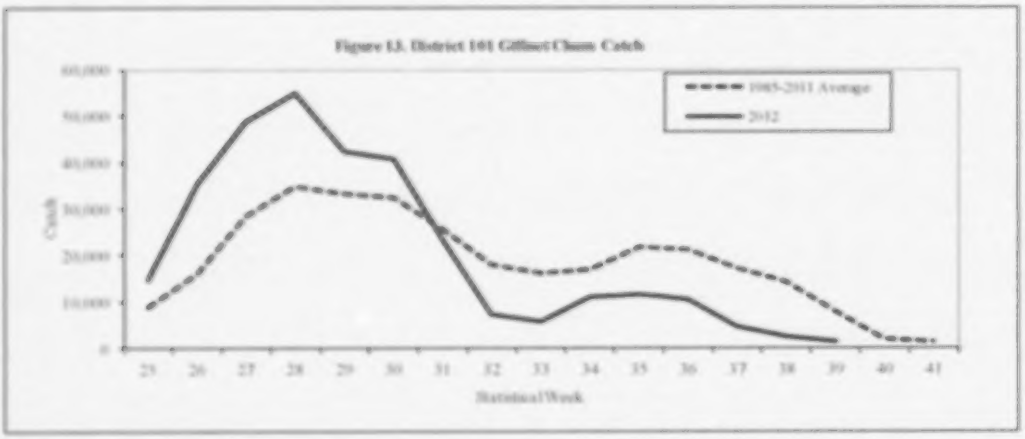
Coho catches were about average until early August after which they rose to above average (Figure 11).



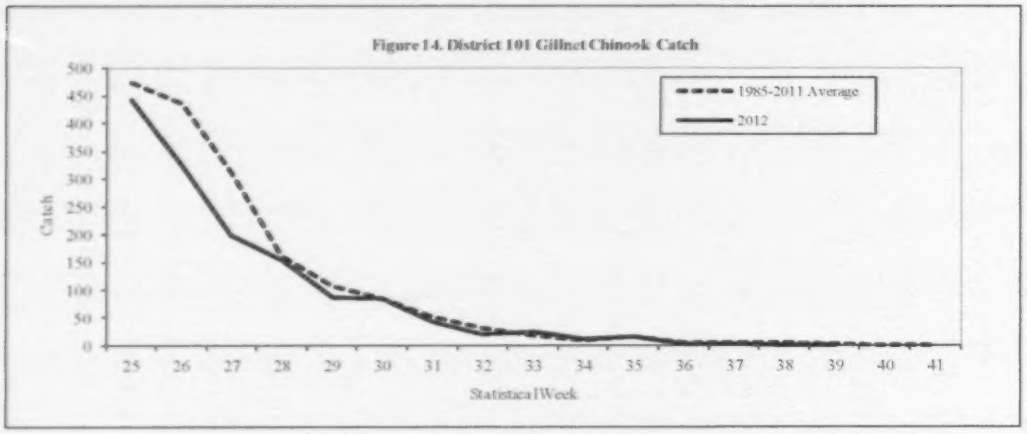
Pink salmon catches were below average except for week 28 (Figure 12).



Chum salmon catches were above average early in the season but fell below average beginning in late July (Figure 13). Beginning on September 2 (week 36) the fishery was managed on the strength of wild stock fall chum and coho salmon returns.



Chinook salmon catches were below average early in the season (Figure 14).



Pink, Sockeye, and Chum Salmon Escapements

The total 2012 Southeast Alaska pink salmon escapement index of 11.0 million index fish ranked 18th since 1960, and was 75% of the recent 10-year average of 14.7 million. Biological escapement goals are in place for three sub-regions in Southeast Alaska and escapement goals were met in two of the three sub-regions in 2012 (Table 5). On a finer scale, escapements met or exceeded management targets for 10 of 15 districts in the region and for 31 of the 46 pink salmon stock groups in Southeast Alaska. Pink salmon returns were generally weak throughout much of the Northern Southeast Inside sub-region in 2012. The Southern Southeast sub-region includes all of the area from Sumner Strait south to Dixon Entrance (Districts 101–108). The escapement index value of 6.5 million was well within the escapement goal range of 3.0 to 8.0 million index fish. The pink salmon harvest of 18.5 million in the Southern Southeast sub-region was near the recent 10-year average of 20.2 million fish.

Table 5. Southeast Alaska 2012 pink salmon escapement indices and biological escapement goals by sub-region (in millions). The total is slightly less than the sum of all three sub-regions due to rounding of numbers.

Sub-region	2012 Pink Salmon Index	Biological Escapement Goal	
		Lower Bound	Upper Bound
Southern Southeast	6.5	3.0	8.0
Northern Southeast Inside	2.1	2.5	6.0
Northern Southeast Outside	2.5	0.75	2.50
Total	11.0		

Sockeye salmon returns throughout Southeast Alaska were generally strong in 2012. Escapement targets were met for 11 of the 13 sockeye salmon systems in Southeast Alaska with formal escapement goals. The Hugh Smith Lake adult sockeye salmon escapement was 13,400, which was within the optimal escapement goal range of 8,000 to 18,000 adult sockeye salmon. McDonald Lake sockeye salmon were de-listed as a "stock of management concern" at the 2012 Board of Fisheries meeting, based primarily on improved escapements since 2009. Based on the expanded peak foot survey count, the escapement of

sockeye salmon into McDonald Lake was estimated to be 57,000 fish in 2012, which was near the lower bound of the sustainable escapement goal of 55,000 to 120,000 sockeye salmon.

For summer-run chum salmon, lower bound sustainable escapement goals were met for all three sub-regions in Southeast Alaska. In southern Southeast Alaska, runs are broken into summer and fall runs. The Southern Southeast chum salmon stock group is composed of an aggregate of 13 summer-run chum salmon streams on the inner islands and mainland of southern Southeast Alaska, from Sumner Strait south to Dixon entrance, with a sustainable escapement goal of 54,000 index spawners (based on the aggregate peak survey to all 13 streams). The index of 144,000 in 2012 was the sixth highest index value in the time series (Figure 15).

Fall chum salmon runs in Cholmondeley Sound, Prince of Wales Island, appeared to be strong overall and the escapement goal was easily met. Cholmondeley Sound is the only area in southern Southeast Alaska with a formal escapement goal for fall chum salmon. Fall chum salmon runs are monitored in Cholmondeley Sound through aerial surveys at Disappearance and Lagoon creeks. The escapement index of 54,000 was above the upper bound of the sustainable escapement goal range of 30,000 to 48,000 index spawners (based on the aggregate peak survey to both streams; Figure 16).

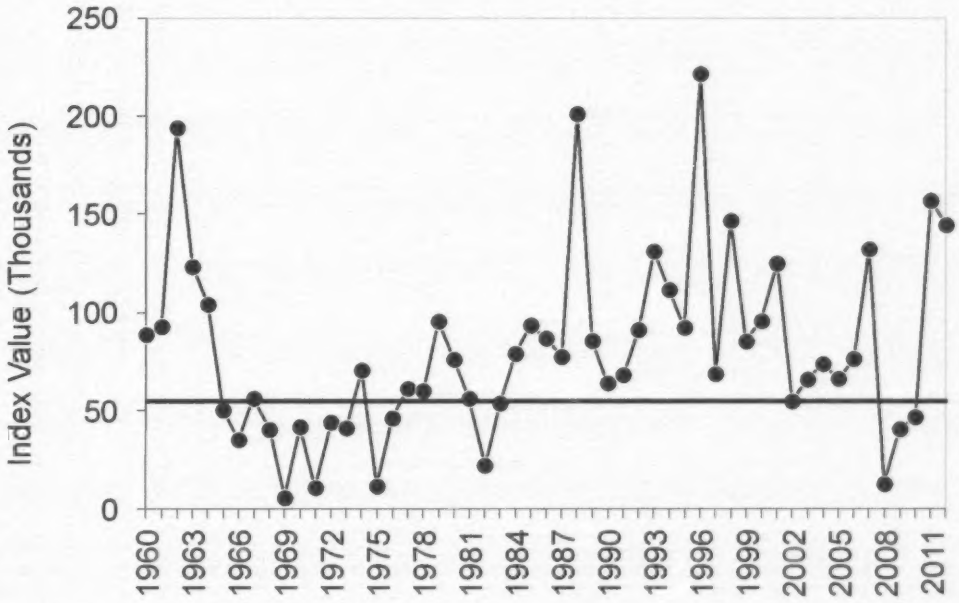


Figure 15. Observed escapement index value by year (solid circles) and the sustainable escapement goal threshold of 54,000 index spawners (horizontal line) for wild summer-run chum salmon in the Southern Southeast sub-region, 1980–2012.

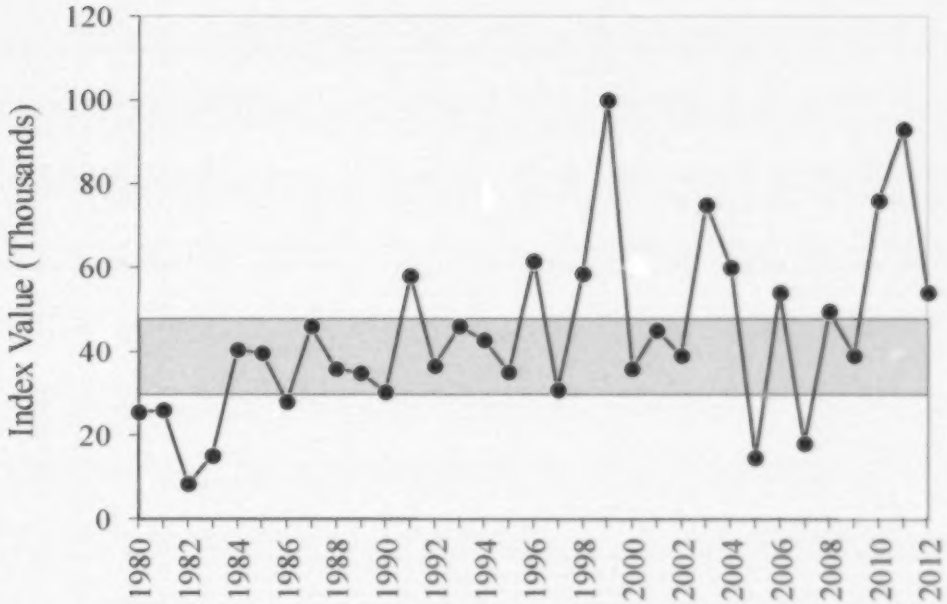


Figure 16.–Observed escapement index value by year (solid circles) and the sustainable escapement goal range of 30,000 to 48,000 index spawners (shaded area) for Cholmondeley Sound fall-run chum salmon, 1980–2012.

Transboundary Area Fisheries

Stikine River Area Fisheries

The preseason forecast for Chinook salmon returning to the Stikine River was approximately 40,800 fish. The resulting U.S. AC was 5,890 large Stikine Chinook salmon. This forecast was above the midpoint of the escapement goal range of 21,000 large Chinook upon which the preseason harvest allocations are based. A directed Stikine River Chinook salmon commercial fishery began May 7 in District 108 in 2012 and was the first directed commercial fishery for Chinook salmon since 2008. Additionally, enhanced Chinook salmon returning to Anita Bay Terminal Harvest area may be harvested in these fisheries and the expected return was 10,000 fish.

The directed Chinook salmon fishery in District 108 was open for one day each week in weeks 19-21, harvests were weaker than anticipated with a total catch for this period of 450 fish. The first in-season forecast of 29,300 Stikine River Chinook salmon was substantially less than the preseason forecast and resulted in a U.S. allowable catch too small to allow further directed commercial fisheries. Subsequent forecasts were also lower than the preseason forecast and highly variable ranging between 21,000 and 34,600 fish. As a result, directed commercial fisheries in District 108 closed until the beginning of the traditional sockeye salmon fishing season.

The 2012 Stikine River sockeye salmon return was expected to below the previous 10 year average. The preliminary forecast for total return to the Stikine River was 134,000 sockeye salmon. The 2012 forecast included approximately 51,700 Tahltan (39%), 32,600 enhanced Tuya (24%), and 49,700 wild mainstem (37%) sockeye salmon. Due to the near identical return timing of the Tahltan Lake and Tuya Lake stocks,

any open fishing periods in District 108, and to a lesser extent in District 106, are determined by the in-season abundance estimate of the Tahltan Lake return. Typically, the Tahltan Lake and Tuya Lake sockeye salmon run timing peaks in statistical week 27 (July 1–7) through the District 106 and 108 fisheries. During an average Tahltan Lake run significant numbers of sockeye could be present as early as statistical week 24 (June 10–16) and as late as statistical week 31 (July 29–Aug 4).

The 2012 returns of local area sockeye salmon stocks were expected to be average to below average based on parent year escapements. Parent-year escapements to most local sockeye systems were near average with the exception of the Salmon Bay Lake return which was well below average. The sockeye salmon return to McDonald Lake may be below average based on low parent year escapements and rearing fry estimates. However, recent escapements have been stronger than anticipated and the number of 2-ocean fish in the 2011 escapement was the highest since 1990, indicating that survival rates have likely increased for McDonald Lake sockeye salmon.

Both District 106 and 108 opened for the directed sockeye salmon season with a two day opening on Monday, June 18 (week 25). Catch rates for sockeye salmon were average to above average with average effort in both districts. Due to the low expected return of Tahltan sockeye salmon, no extra time occurred. The in-season assessment for Chinook salmon returning to the Stikine River at this time was 33,600 large adults. This latest forecast resulted in a U.S. Allowable Catch (AC) of Stikine River Chinook salmon of 3,400 fish. Escapement of Chinook salmon to Stikine River was expected to be within the goal range of 14,000 to 28,000 fish.

Both Districts 106 and 108 opened for a two day opening on Sunday June 24 (week 26). On the grounds surveys of the gillnet fleet did not indicate an abundance of sockeye salmon significantly above the preseason forecast. Therefore, no additional fishing time occurred.

Both districts opened on Sunday, July 1 (week 27) for two days. On the grounds surveys of the gillnet fleet indicated above or near average harvests with low effort and low overall harvest of Stikine River sockeye salmon. Therefore, a 24 hour extension occurred.

The District 106 and 108 drift gillnet fishery opened initially for two days on Sunday, July 8 (week 28). On the grounds surveys of the gillnet fleet indicated above or near average harvest rates with continued low effort. Therefore, a 24 hour extension occurred. The in-season Stikine River sockeye salmon forecast was similar to the preseason forecast of 134,500 fish.

The District 106 and 108 drift gillnet fishery opened initially for two days on Sunday, July 15 (week 29). On the grounds surveys of the gillnet fleet indicated above or near average sockeye salmon harvest rates. Effort remained low resulting in below average harvests. As a result of the good harvest rates and expected below average harvest, a 24 hour extension occurred.

The District 106 and 108 drift gillnet fishery opened for three days on Sunday, July 22 (week 30). On the grounds surveys of the gillnet fleet indicated above or near average sockeye salmon harvest rates. Effort remained low resulting in below average harvests.

Both districts opened for three days on Sunday July 29 (week 31). Effort was below average in District 106 but slightly above average in District 108. The majority of boats fishing in District 108 were targeting enhanced chum salmon returning to Anita Bay with very few boats targeting sockeye salmon. Sockeye and pink salmon catches were below average in both districts.

Both districts opened for three days on Sunday August 5 (week 32). Management focus for the Districts 106 and 108 gillnet fisheries transitioned to pink salmon abundance after the first of August. Effort

increased in District 106 with above average pink salmon catches for the time of year. Catches were below average in District 108 with a decrease in effort. The low harvest in District 108 was a reflection of fishers targeting Amita Bay chum salmon, which are near the end of the run timing.

Management focus of the Districts 106 and 108 gillnet fishery for the opener on August 12 (week 33) was based on pink salmon abundance. Both districts opened for three days this week with a reported decrease in participants. Pink salmon catch rates dropped to below average in District 106, but improved to above average for District 108. Recent aerial surveys of Districts 106 and 108 pink salmon systems indicate lower than normal escapements for this time of year. With poor catch performance in District 106 and lagging escapements, time was reduced to two days for the next opener.

The final in-season Stikine River sockeye run size estimate was 120,000 fish. Sockeye escapement to Tahltan Lake was below goal, while escapements to the mainstem system were above goal. Sockeye salmon escapement to local inland systems was good to excellent. Escapement of Chinook salmon to Stikine River is expected to be within the goal range of 14,000 to 28,000 fish.

Management of the Districts 106 and 108 gillnet fisheries continued to be based on pink salmon abundance in the two day opening beginning August 19 (week 34). Effort decreased in District 106 and remained steady in District 108. Recent aerial surveys of Districts 106 indicate that pink salmon abundance is lower than expected for this time of year in some of the systems in the Sumner Strait and Prince of Wales Island. With poor catch performance and some lagging escapements, management continued with conservative measures during the next opener.

Both districts opened for two days on August 26 (week 35). Harvest rates for wild coho salmon trended above average for most of the year to date. Initial harvest reports for coho salmon from week 35 were above average.

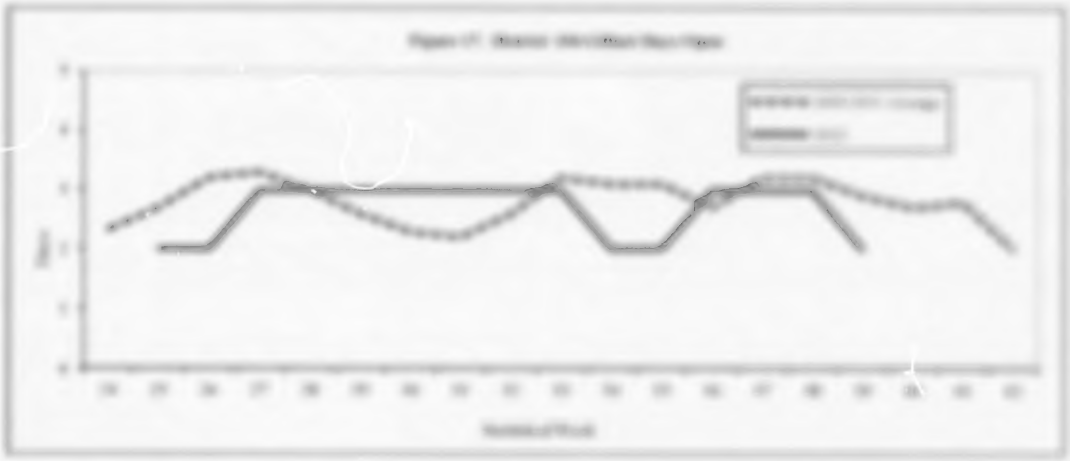
Management focus for the Districts 106 and 108 gillnet fisheries transitioned from pink salmon abundance to wild coho salmon abundance for the three day opening on September 2 (week 36). Harvest rates for wild coho salmon trended above average for the past couple of openers. Initial harvest reports for coho salmon were near average for both districts. The peak of the return for wild coho salmon was expected in the near future in Districts 106 and 108, which for the past ten years has occurred early or mid September. The hatchery component of the harvest was expected to increase steadily during the next few weeks.

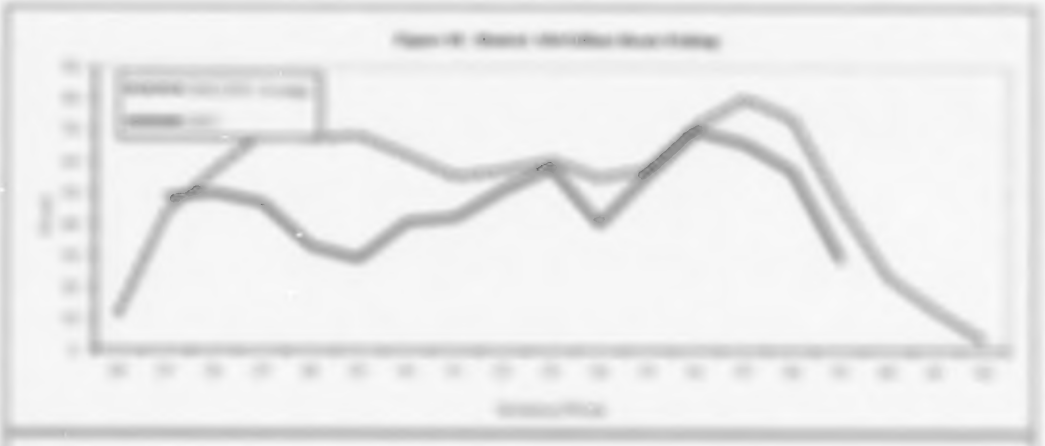
Both districts opened for three days on September 9 (week 37). Effort remained the same in both districts. Catch rates for coho salmon were above average in District 108, while below average in District 106.

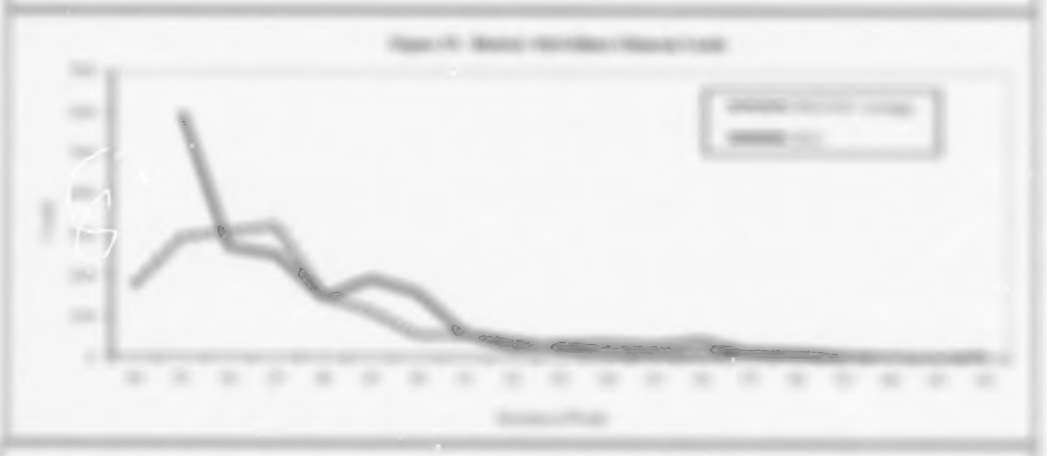
Management of the Districts 106 and 108 gillnet fisheries for the opening on September 16 (week 38) was based on wild coho salmon abundance. Both districts opened for 72 hours and effort continued to be below average. Harvest rates for coho salmon were average overall. The hatchery component was higher than average for much of the fall. During the past few weeks, the wild component was below average and that the trend was expected to continue. Both fisheries closed after a two day opening in week 39.

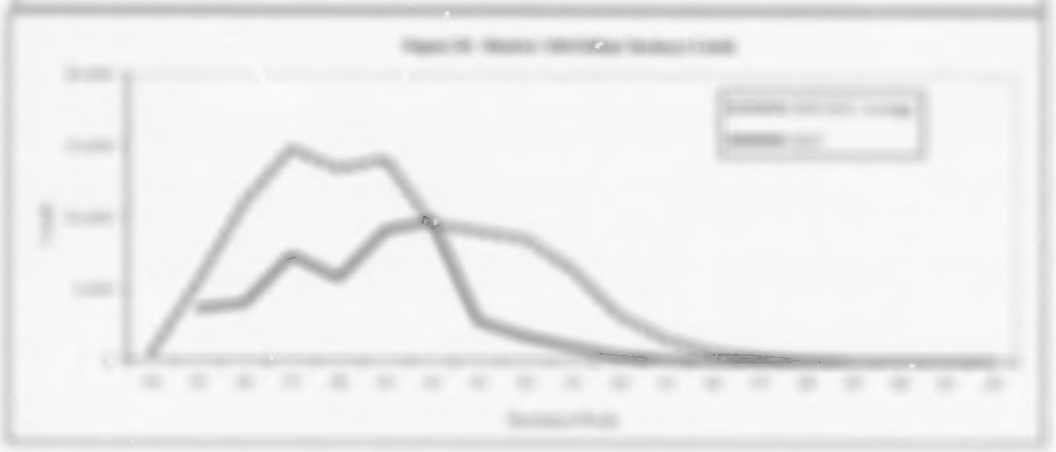
Table 6. Weekly salmon catch in the Alaskan District 196 commercial drift gillnet fisheries, 2012. Catches do not include Bristol Bay/Egegik terminal area harvests.

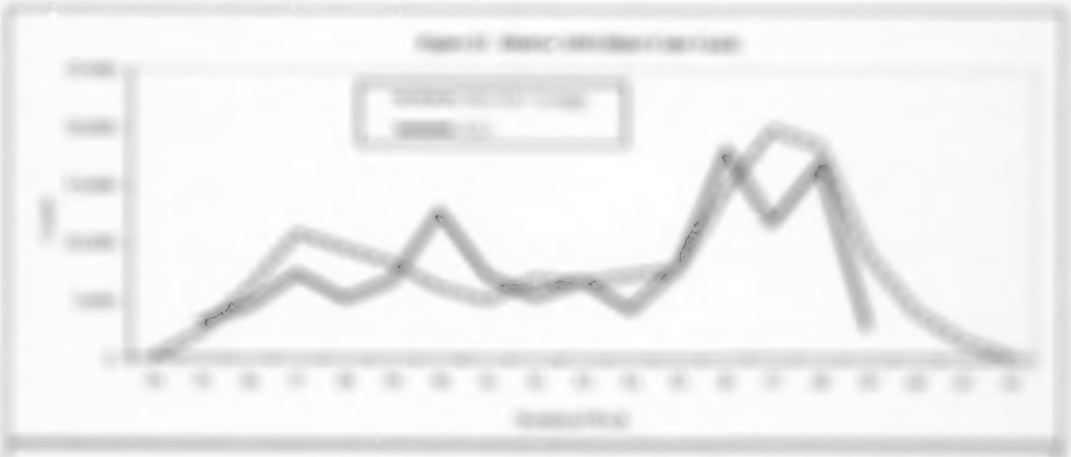
Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Permits	Days	Permit Days
25	18-Jun	596	3,655	1,211	172	2,980	49	2	98
26	24-Jun	269	3,989	4,642	170	6,908	50	2	100
27	1-Jul	259	7,341	7,428	2,629	18,393	47	3	141
28	8-Jul	167	5,767	5,156	3,855	17,239	33	3	99
29	15-Jul	193	9,145	6,868	3,378	15,653	29	3	87
30	22-Jul	197	9,773	12,764	16,372	16,757	41	3	123
31	29-Jul	95	2,865	7,171	14,243	5,747	42	3	126
32	5-Aug	26	1,717	5,422	45,187	6,891	51	3	153
33	12-Aug	33	975	6,907	36,275	3,422	58	3	174
34	19-Aug	36	340	4,338	6,524	2,191	40	2	80
35	26-Aug	27	96	8,065	5,464	3,614	56	2	112
36	2-Sep	69	59	18,109	1,472	3,749	70	3	210
37	9-Sep	13	13	11,786	105	1,540	66	3	198
38	16-Sep	11	21	16,892	14	1,310	57	3	171
39	23-Sep	2	1	2,827	0	227	29	2	58
Total		1,853	45,666	121,588	139,856	104,444	133	40	1,429
2002-2011 Average		1,472	98,499	144,554	267,420	195,427	157	49	2,822
2012 as % of Average		126%	46%	84%	49%	54%	85%	82%	68%











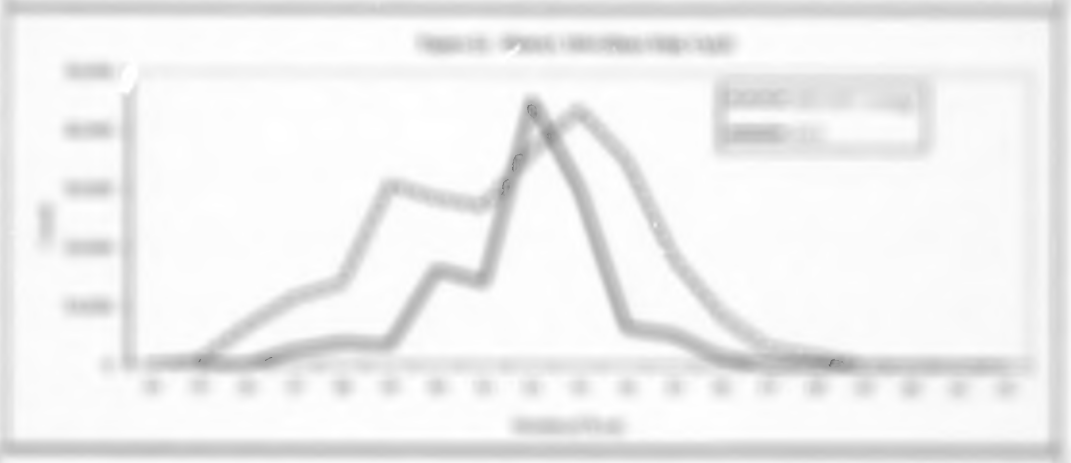
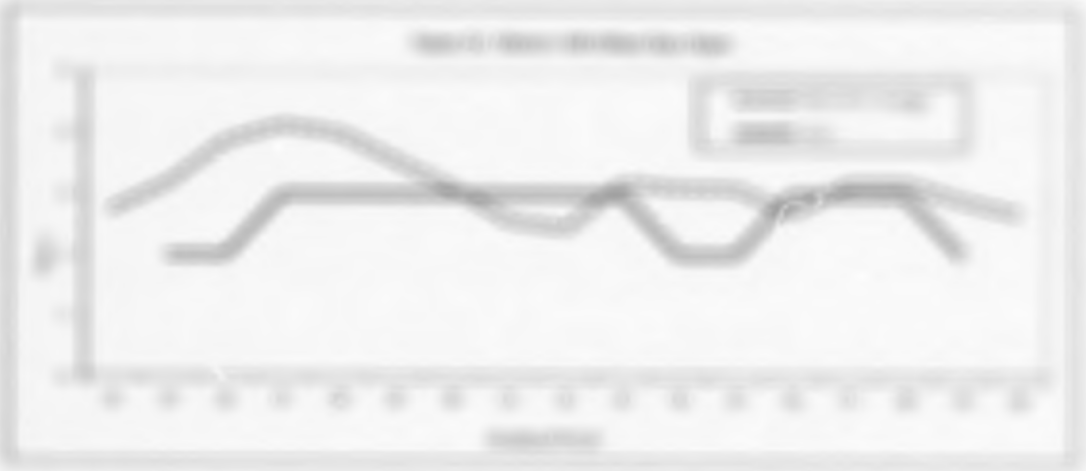


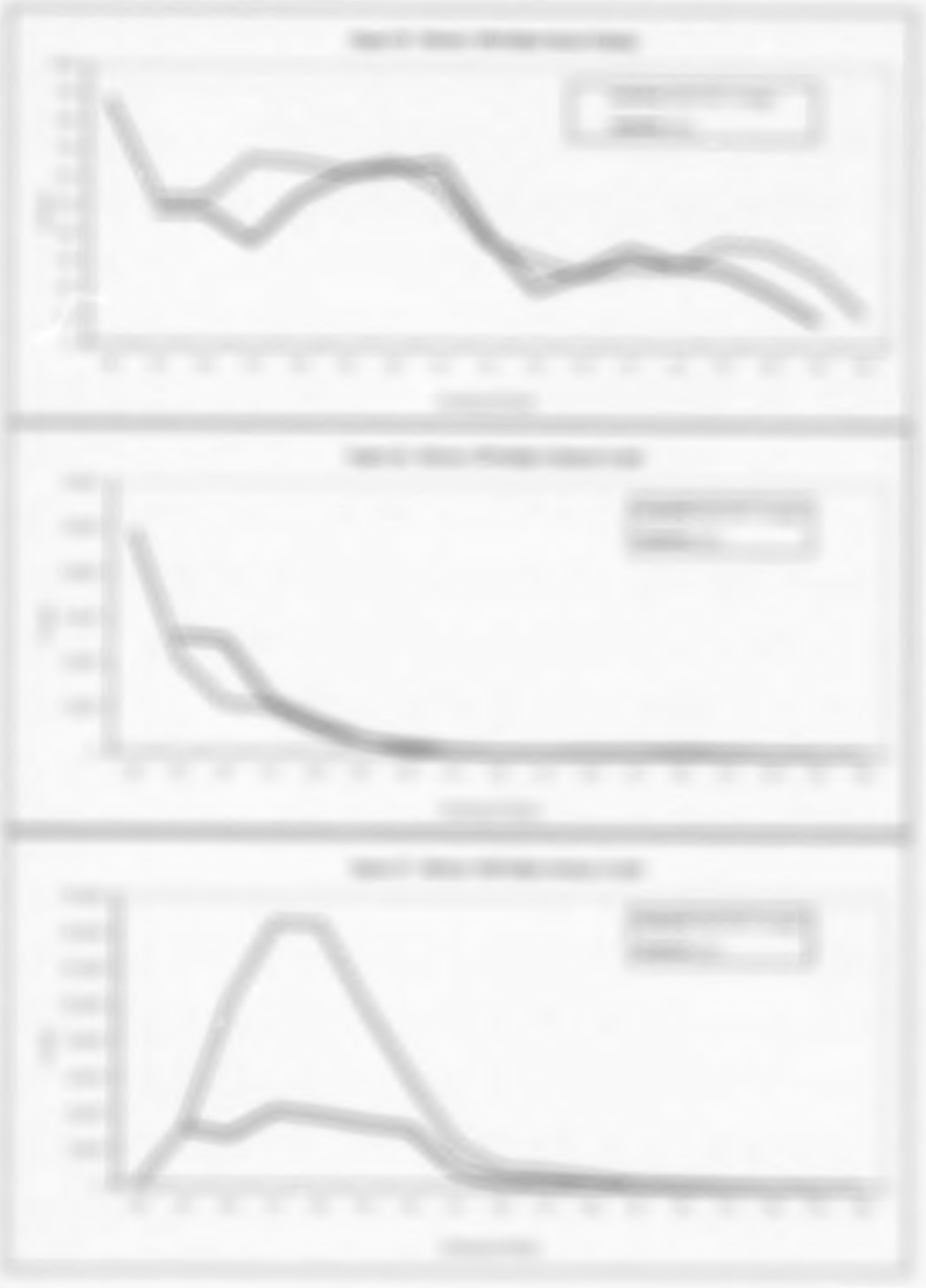
Table 1. Weekly address count and effort by the Shoshone Masons (SM) divorced northern address research and gillnet fishery, 2014a. The periods days are adjusted for hours that fished and the arithmetic average.

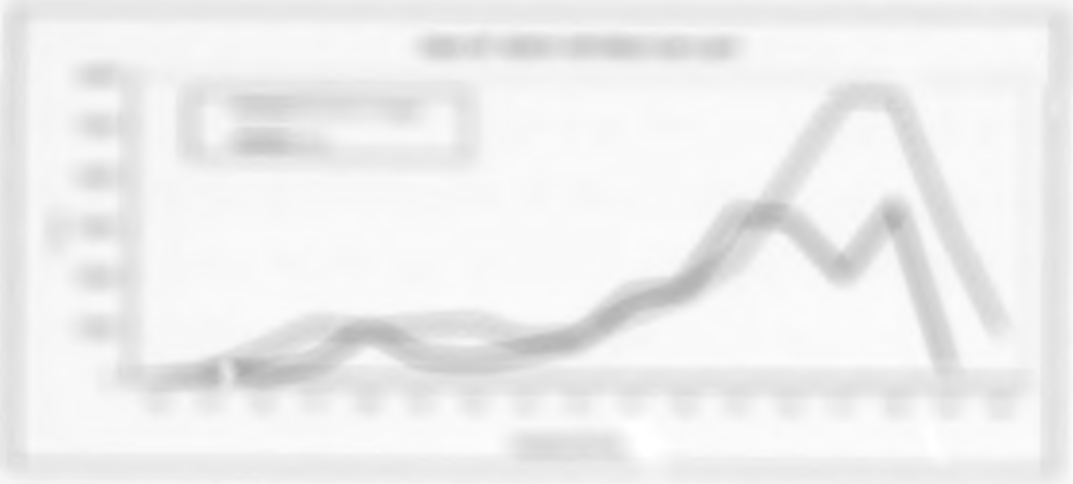
Week	Start Date	Fishers/d	Boats/d	Trips	Sets	Hours	Kilometers	Days	Percent Days
27	7-Jul	1,425	1,130	215	1	310	20	1	50
28	14-Jul	1,500	1,200	240	0	1,230	40	1	50
29	21-Jul	1,215	1,175	300	300	1,170	57	1	100
30	28-Jul	750	1,000	200	200	800	30	1	100
31	4-Aug	900	1,020	204	102	882	30	1	100
32	11-Aug	90	1,215	243	1,800	1,215	60	1	100
33	18-Aug	0	600	600	1,200	2,400	60	1	100
34	25-Aug	0	507	845	1,690	1,690	60	1	100
35	1-Sep	0	210	1,700	3,400	1,020	60	1	60
36	8-Sep	0	50	1,800	540	1,296	60	1	30
37	15-Sep	0	20	1,317	987	948	60	1	60
38	22-Sep	0	0	1,248	0	936	60	1	60
39	29-Sep	0	0	1,161	0	870	60	1	60
40	6-Oct	0	0	1,017	0	97	60	1	40
41	13-Oct	0	0	210	0	0	0	0	00
Total		1,215	1,200	21,130	11,770	16,134	510	20	1,200
Week 20-41 Average		1,215	1,215	1,200	1,200	1,200	1,200	1,200	1,200
Week 20-41 Standard Deviation		1,215	1,215	1,200	1,200	1,200	1,200	1,200	1,200

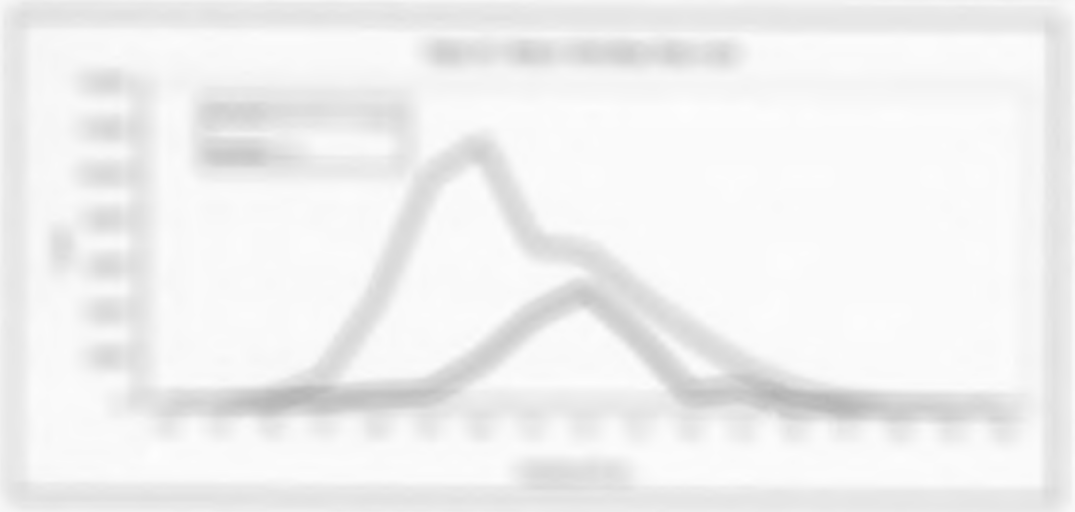
a. No. 1-1. Masons SM gillnet effort count and effort in 1,000 of the 1997-1-1 in Figure 1a for the divorced northern address symbols of the Masons area. In the 1-1 divorced Shoshone address Masons, SM gillnet boats have used 1-1 Shoshone address in one day openings in week 1-1-1 before the Masons was closed like a pure to coastal estimators.

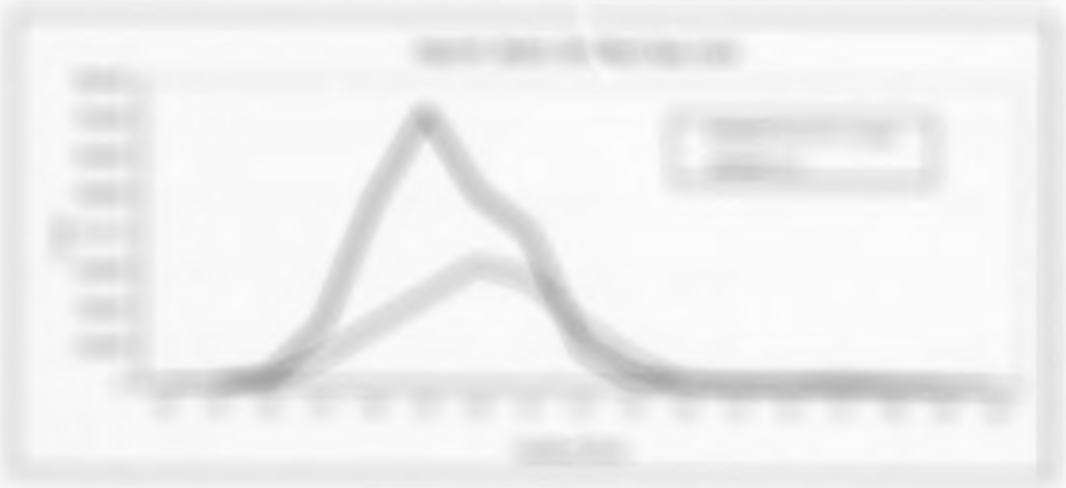
Figure 1-1-1 on for the divorced northern address symbols of the Masons SM gillnet fishery was











The weekly forecasts of run size and total allowable catch for Stikine River sockeye salmon as determined in-season by the Stikine Management Model, as well as the preliminary post season Stikine River sockeye salmon run reconstruction, were not available at the time this report was submitted.

Taku River Area Fisheries

The escapement goal range for large Taku River Chinook salmon is 19,000 to 36,000 fish with a point goal of 27,500 fish. The PST established base level catches of 1,500 and 3,500 large Chinook salmon for Canada and the U.S., respectively, that reflect the average harvests by each country between 1985 and 2003. In years of high abundance, directed fisheries can be implemented to harvest runs in excess of escapement needs.

For the Taku River, the 2012 preseason terminal run forecast was 48,038 large adult Chinook salmon allowing for a U.S. allowable catch (AC) of 6,703 fish. Drift gillnet fisheries were opened for 12 hours in both week 19 (May 6-12) and week 20 (May 13-19) and a total of 174 Chinook salmon were landed by 20 boats.

The AC is adjusted as in-season information on run strength becomes available. The first in-season estimate of Taku River Chinook salmon run strength was generated in week 20 and was considerably below the preseason forecast, providing no allowed catch for further fisheries. The third estimate of run strength was generated in week 22 and projected a terminal run size of 30,600 large Taku Chinook, well below forecast and the 19,000 fish minimum of the escapement goal range. The department continued to evaluate in-river stock assessment information as it became available. The traditional drift gillnet fishery in District 111 began on Sunday, June 17, 2012.

The preliminary District 111 harvest of Taku Chinook salmon was: 987 in the drift gillnet fishery, 8 in the troll fishery, 1,093 in the sport fishery, and 30 in the personal use fishery, for a total of 1,818, well below the base level catch of 3,500 fish.

Sockeye salmon returns to the Taku River in 2012 were expected to be slightly below the 10-year average terminal run size of approximately 219,000 sockeye salmon based on Canadian stock recruit and sibling forecasts Douglas Island Pink and Chum, Inc. (DIPAC) forecast 230,000 enhanced sockeye returning to Port Snettisham. DIPAC forecast a return of 1.2 million chum salmon to Gastineau Channel and Limestone Inlet, similar to recent seasons.

The initial District 111 opening directed on sockeye and chum salmon was for two days on Sunday September 17 (week 37) with area and gear restrictions in place to conserve Chinook salmon. Fishing effort was below average and harvests were below average for all species, with both sockeye and Chinook CPUE just over half the recent average. While chum CPUE was better, it was still below average. On the Taku River, the Canyon Island fish wheel cumulative sockeye catch was just over half of the ten year average to date, and daily catches were disappointing. The Canadian in-river fishery fished one day due to Chinook concerns, and their sockeye CPUE was close to the ten year average.

District 111 was open for 2 days in week 39 (beginning June 24) due to below average sockeye CPUE in the prior week fishery as well as mixed but weak in-river indicators. On the grounds surveys observed less than half of the average fleet size for the week. Catches for all species but chum salmon were below average, with the chum salmon harvest twice the average. CPUEs of Chinook and sockeye salmon were average, and the chum salmon CPUE was well above average for the week. The snowmelt driven high water on the Taku River hampered stock assessment activities, the Canyon Island fish wheel catches of sockeye salmon were well below the daily average, the Canadian in-river fishery was struggling with the

high water as well resulting in insufficient data to generate an in-season estimate of sockeye salmon abundance.

District 111 opened for 2 days on July 1 (week 27). Effort was less than average and catches and CPUE for all species were below average as well. Water levels on the Taku River declined to levels optimal for fish wheel performance at Canyon Island but the sockeye catch, though improving, remained below the daily average.

District 111 was open for 2 days in week 28 (beginning July 8) effort as well as catches and for all species were below average. CPUE was below average for all but Chinook salmon which were average, and chum salmon which were nearly twice the average. Water levels on the Taku were good for fish wheel performance, yet the sockeye salmon catch remained about two thirds of the daily average. The weekly preliminary in-season estimate of above border sockeye abundance was still below average but had improved over the prior week.

District 111 was open for two days in week 29 (July 15), less than the average three day opening for this week. Fleet size was estimated equal to the average of 110 boats. Catches of coho and pink salmon were below average, catches of sockeye salmon were average, and the chum salmon catch was well above average. Catch per unit effort (CPUEs) were above average for sockeye, coho, and chum salmon, and below average for pink salmon. Water levels on the Taku continued at optimal levels for fish wheel performance yet the fish wheel sockeye catch remained below average. Preliminary analysis of otoliths from Taku Inlet suggested a strong presence of enhanced Snettisham sockeye in the catch.

With weak Taku sockeye indicators, uncertainty about wild Port Snettisham stocks, and a strong fleet in the area and nearby, District 111 opened for two days in statistical week 30 (July 22). A slightly above average sized fleet harvested twice the average number of sockeye salmon. No extension was given in Taku Inlet due to the uncertainty in the origin of the catch as the in-river indicators did not reflect the surge of sockeye salmon in the Taku River until the day the fishery closed. Indicators pointed to a stronger than recent years sockeye return to Port Snettisham, so the area south of Circle Point was extended an extra day with the mesh restriction in place to conserve wild Speel Lake sockeye. Chinook and coho catches were a third of average, chum catches were nearly twice average, and the pink catch was 150% of the average. A good show of sockeye salmon was observed in Crescent Lake and the high percentage of enhanced thermal marks in the otolith samples from Taku Inlet indicated good returns developing to Port Snettisham, but it was too early to tell if Speel Lake would also see a strong wild sockeye salmon return as both main parent years escapements were below the minimum of the escapement goal range.

With much improved Taku River and Port Snettisham sockeye indicators, District 111 was open for three days in statistical week 31 (July 29) with mesh restrictions south of Circle Point due to uncertainty regarding wild Speel Lake sockeye salmon. Pink salmon returns were developing adequately. Sockeye and pink harvests were about average while chum harvest was well above average.

In week 32 (August 5) the fishery was open for three days with a less than average sized fleet redistributed between sub-districts this week with 2/3s of the fleet now fishing south of Circle Point. Catches of sockeye salmon for the district were average with above average catch per unit effort (CPUE) driven by the good return of Snettisham Hatchery enhanced fish. Catches and CPUE of Chinook, coho and chum salmon were below average, and pink salmon continue strong with catches and CPUE well above average. Taku in-river sockeye salmon indicators continued to be close to average. The Speel Lake weir count was nearing 600 fish with a steady trickle of fish across each day. Jumps and schools of fish observed in Port Snettisham suggest a good buildup of fish holding in those waters. Preliminary otolith analysis pointed to a high percentage of enhanced sockeye salmon in the catch.

With below average effort, average Taku river sockeye salmon indicators, adequately developing escapements to wild Port Snettisham sockeye systems, District 111 was open for three days in statistical week 33 (August 13), with the waters of Port Snettisham closed to protect wild sockeye salmon holding in the area. A less than average 70 boats had fairly good sockeye salmon catches for this time of the season, and preliminary otolith analysis suggested over 40% of the sockeye harvest in Taku Inlet were Snettisham hatchery fish. The fleet shrank over the course of the fishery with 9 boats fishing at the time of the closure. Coho salmon catches were starting to pick up in Taku Inlet after being very poor for the early run. Canyon Island fishwheel catches of sockeye salmon were above average the last few days, but coho salmon catches remained below average, with a cumulative fishwheel count near 45% of the ten year average. Due to the Golden North Salmon Derby taking place in Juneau area waters the opening in both District 111 and District 115 were delayed until Monday noon. The Canadian in-river fishery had above average catch per unit effort (CPUE) for sockeye and slightly above average for coho salmon, enhanced by the lower water levels in the Taku River. A strong push of sockeye salmon at the Snettisham Hatchery alleviated broodstock concerns, and a similar push at Speel Lake brought the escapement up to half of the 4,000 fish minimum.

District 111 shifts to coho salmon management in statistical week 34 (August 19) and with poor fishwheel catches and mixed in-river fishery indicators the fishery was open for a conservative two days. An above average fleet harvested average numbers of sockeye salmon and below average numbers of the other species of salmon. Catch per unit effort (CPUE) were average for sockeye salmon, near average for coho and chum salmon and below average for pink salmon. With the achievement of the minimum sockeye salmon escapement goal to Speel Lake, the Speel Arm Special Harvest Area opened to harvest returning Snettisham Hatchery sockeye salmon, with below anticipated catches. The small number of boats that began in Taku Inlet enjoyed decent coho salmon catches the first day, rapidly dropping off as the fleet leaving Port Snettisham moved in. The Canyon Island fish wheel coho salmon catches were improving and the first in-season estimate of coho salmon abundance projected an in-river run of 99,000 fish, approximately equal to the preseason forecast, and above the Pacific Salmon Treaty mandated minimum of 38,000 coho salmon be passed above border.

In week 35 (August 26) effort was about half of average for this week, with only a tiny fleet in Port Snettisham hoping for a good buildup of hatchery sockeye salmon. With very modest catches in Speel Arm, the sockeye salmon harvest and catch per unit effort (CPUE) was well below average. For the fleet fishing for coho salmon in Taku Inlet catches were decent. Total harvest was below average, but the small fleet's CPUE was over 150% of average for the week. Pink salmon have all but vanished with well below average harvest and CPUE, and the fall chum salmon are making a promising show with an average harvest and nearly twice the average CPUE. In-river indicators were mixed with fish wheel counts running below average, but that is expected with low water levels in the Taku River. The Canadian in-river fishery showed average CPUE for the week. At this point the Speel weir had passed 5,400 sockeye salmon with escapements within the 4-13 thousand fish escapement goal range. The weirs on the main Taku sockeye salmon lakes showed a variety of results, with the early timed Kuthai very poor, the mainstay Trapper nearly at the ten year average, and the later run Tatsamenie experiencing what appeared to be a robust return.

In week 36 (September 2) effort was again below average during the three day opening in District 111. With the low effort, catches of all species were below average, but the catch per unit effect (CPUE) of both coho and chum salmon were above average. Taku in-river coho salmon indicators continued to be mixed with Canyon Island fish wheel catches below average, but the Canadian in-river fishery coho salmon CPUE well above average. Both of these values were influenced by the low water levels in the Taku River which depress fish wheel catches and enhance in-river fishery catches.

In week 37 (September 9) District 111 was open for a below average three days. Effort was low, District 111 coho harvest rates were average, and in-river coho indicators continued to be mixed.

In week 38 District 111 (September 16) was open for three days. Effort, which was below average in the prior week declined further with most boats fishing only the first two days. Catches of both coho and chum salmon were below average, with coho catch per until effort (CPUE) below average and chum CPUE average. The Canyon Island fish wheels were demobilized for the season and only the Canadian test fishery remained as an in-river indicator, with CPUE above average. The most recent estimate of Taku coho salmon run strength indicated the Pacific Salmon Treaty (PST) mandated minimum passage of 38,000 coho salmon above border had been achieved, and projected an adequate escapement for the Taku River.

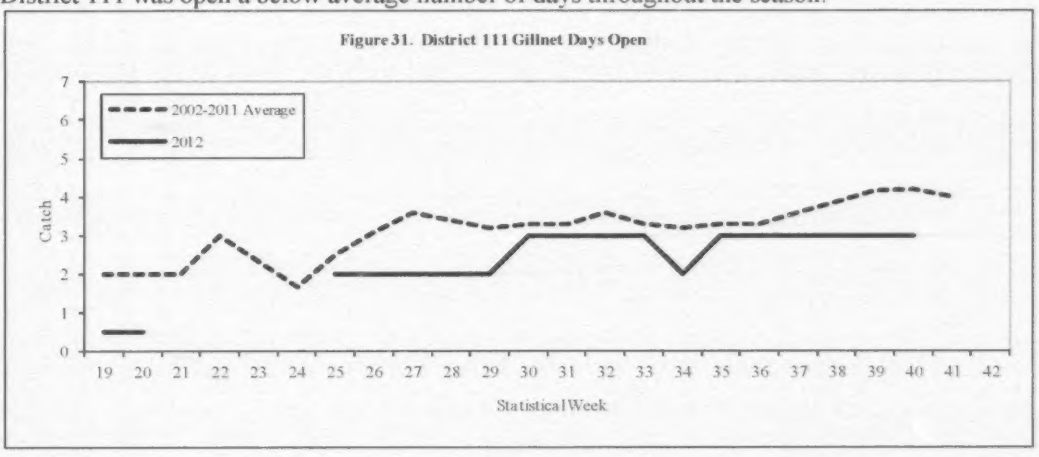
Below average three day a week openings of District 111 continued through week 40. The number of boats fishing, as well as the catch of coho salmon were below average for the remainder of the season.

Table 8. Weekly salmon harvest in the Alaskan District 111 traditional commercial drift gillnet fishery, 2012a.

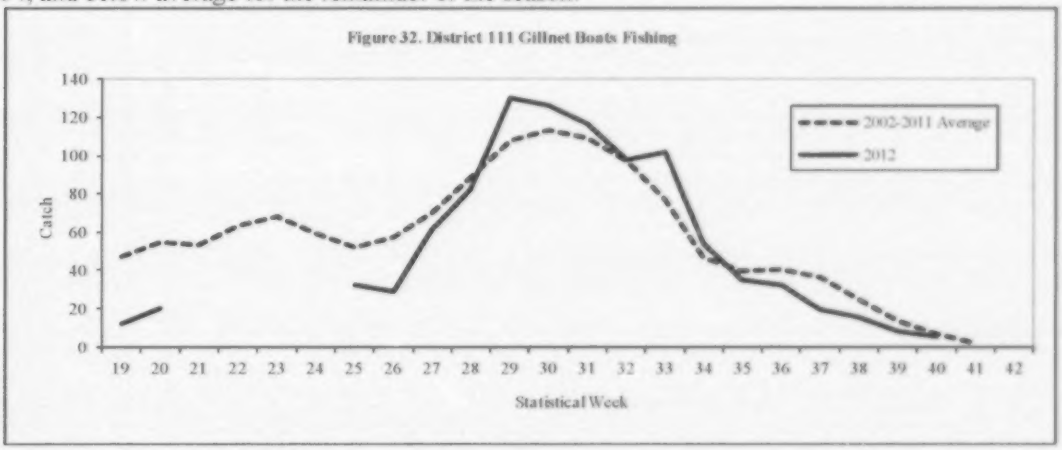
Stat. Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
25	17-Jun	376	1,222	0	1	848	32	2	64
26	24-Jun	168	1,442	3	7	22,599	29	2	58
27	1-Jul	253	3,257	118	349	17,299	61	2	122
28	8-Jul	95	5,063	56	2,377	88,973	82	2	164
29	15-Jul	72	19,631	345	9,484	210,857	130	2	260
30	22-Jul	39	32,799	256	29,634	165,270	126	3	378
31	29-Jul	60	17,074	1,150	60,415	40,839	117	3	351
32	5-Aug	26	31,837	1,343	54,924	11,555	98	3	294
33	13-Aug	17	10,689	6,133	32,223	5,407	102	3	306
34	19-Aug	1	2,058	2,095	2,585	1,108	54	2	108
35	26-Aug	0	352	3,306	101	612	35	3	105
36	2-Sep	0	126	5,082	14	768	32	3	96
37	9-Sep	2	5	1,493	0	131	19	3	57
38	16-Sep	0	4	1,395	0	51	15	3	45
39	23-Sep	0	0	704	0	10	8	3	24
40	30-Sep	0	0	187	0	8	5	3	15
Total		1,109	125,559	23,666	192,114	566,335	201	42	2,446
2002-2011 Average		1,548	129,882	37,509	142,478	444,515	180	57	3,226
2012 as % of average		72%	97%	63%	135%	127%	112%	74%	76%

a The 2012 District 111 drift gillnet catch and effort, as well as the 2002-2011 averages, are for the directed sockeye salmon portion of the fishery only. In the 2012 directed Chinook salmon fishery, 25 drift gillnet boats harvested 174 Chinook salmon in 12-hour openings in weeks 19 and 20 before the fishery was closed due to poor in-season indicators.

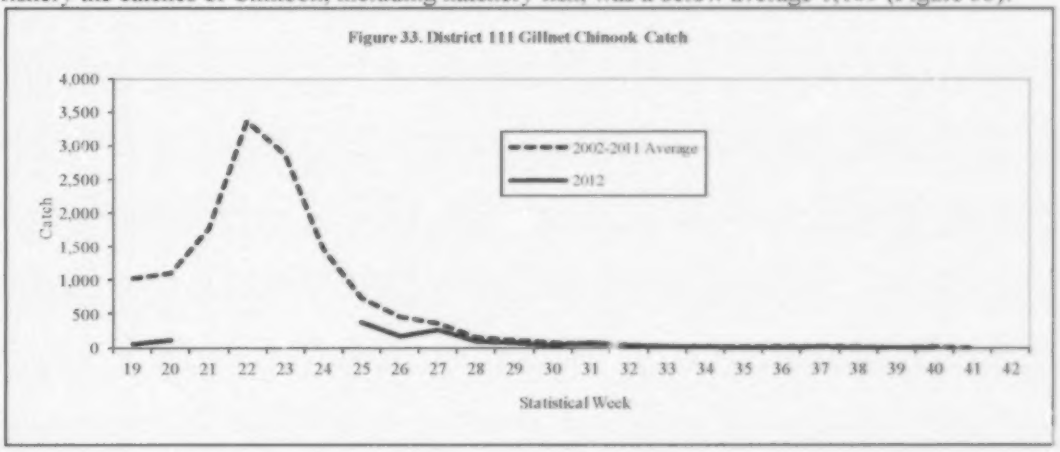
District 111 was open a below average number of days throughout the season.



The number of boats fishing was below average through week 28 (July 15), above average from week 29-34, and below average for the remainder of the season.

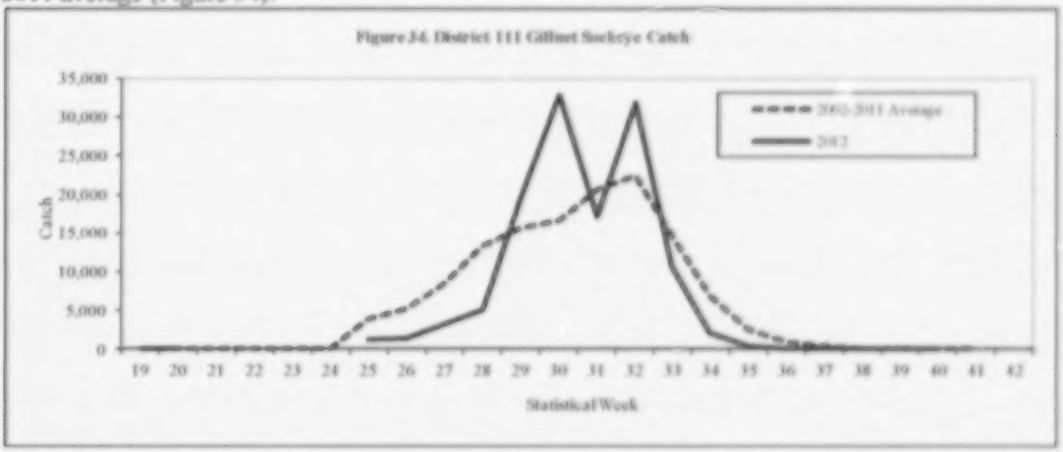


There were two directed Chinook openings in 2012 with a total catch of 174 fish prior to the first in-season forecast which did not allow directed fisheries to continue. In the directed sockeye portion of the fishery the catches of Chinook, including hatchery fish, was a below average 1,109 (Figure 33).

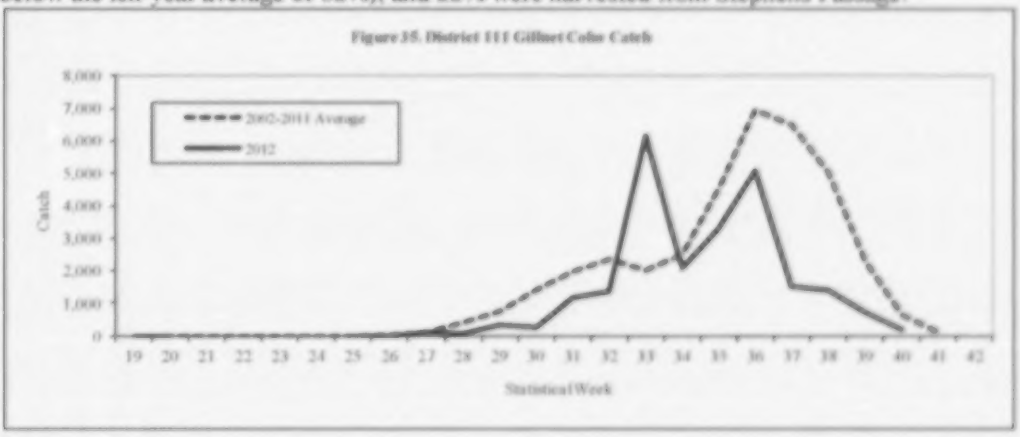


The 2012 wild Taku River sockeye salmon run reconstruction was not available at the time this report was submitted.

The 2012 sockeye catch in the District 111 drift gillnet fishery was 125,559 which is 97% of the 2002-2011 average (Figure 34).

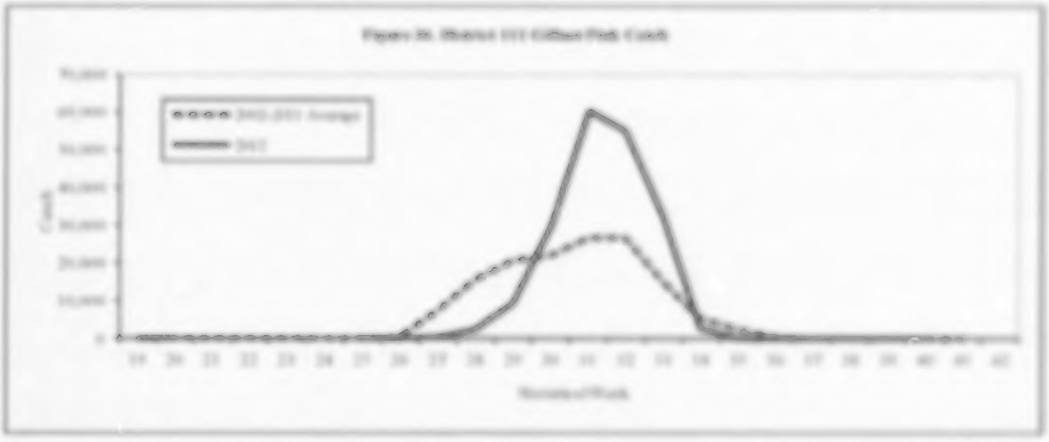


Coho stocks harvested in District 111 include runs to the Taku River, Port Snettisham, Stephens Passage, and local Juneau area streams as well as Alaskan hatcheries. The 2012 coho harvest of 23,666 fish was 63% of the 10-year (2002-2011) average (Figure 35). With the exception of week 33, coho catches were below average throughout the season. Approximately 78% of the coho were harvested in Taku Inlet, below the ten-year average of 82%); and 22% were harvested from Stephens Passage.

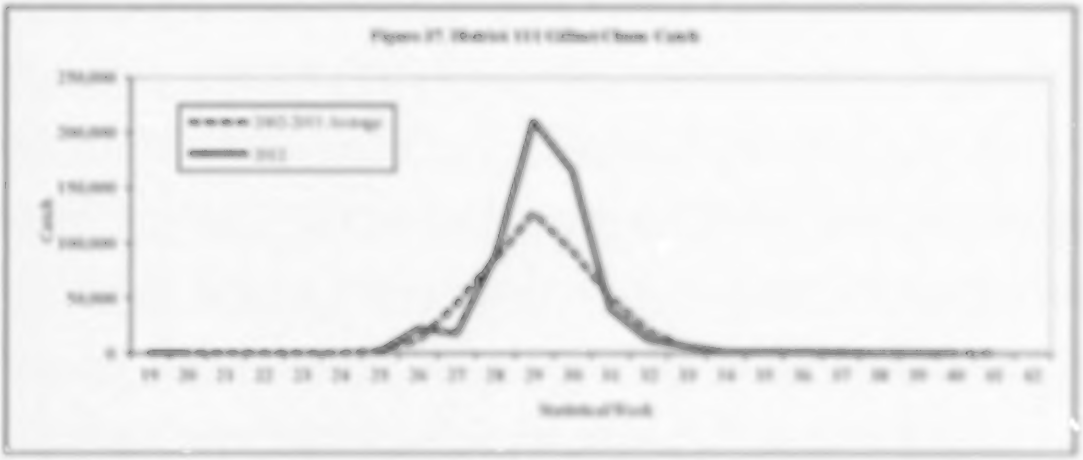


The 2011 District 111 pink salmon harvest of 192,114 fish was 135% of the ten-year (2002-2011) average (Figure 36).

The 2012 pink salmon escapement to the Taku River was unknown; however, the number of pink salmon passing through the fish wheels at Canyon Island is used as an index of escapement. The 2010 (parent year) Canyon Island pink salmon fish wheel catch was 8,868 fish. The 2012 Canyon Island pink salmon fish wheel catch of 5,826 was 60% below the 1992-2010 even-year average of 13,725.



The catch of 556,335 chum salmon was 127% of the ten-year (2002-2011) average, and was comprised almost entirely of summer run fish (Figure 37). The summer chum run is considered to last through mid-August (week 33) and is comprised mostly of domestic hatchery fish and small numbers of wild stocks. Chum salmon returning both to DIPAC hatcheries in Gastineau Channel and to the DIPAC remote release site at Limestone Inlet contributed a major portion of the harvest, but quantitative contribution estimates are not available. Approximately 58% of the District 111 chum harvest was taken in Taku Inlet, and 42% in Stephens Passage.



Chum salmon escapement numbers to the Taku River are unknown, however, the numbers of fall chum passing through the fish wheels at Canyon Island were used as an index of escapement. The index number for 2012, 224 chum salmon, is 106% of the 2002-2011 average for the same time period. Due to budget limitations, the Canyon Island fish wheel project ceased 2012 operations in mid-September, the earliest end date since 1986. Fall chum passage on the Taku River typically continues into October and historically, 26% of the Canyon Island chum salmon fish wheel catch occurs after the 2012 end date.

The harvest of 2,688 fall chum salmon (i.e. chum salmon caught after week 33) was 65% of the ten-year (2002-2011) average. Most of these chums are probably of wild Taku and Whiting River origin.

A number of Chinook salmon stocks are known to contribute to the Juneau area sport fishery, including those from the Taku, Chilkat, and King Salmon rivers, and local hatchery stocks, but the major contributor of large, wild mature fish is believed to be the Taku River. Preliminary estimates indicate that approximately 1,091 of the Chinook salmon harvested in the Juneau sport fishery were of Taku River origin (based on coded wire tag analysis and maturity data from creel survey data).

Transboundary River Juvenile Enhancement

The transport of sockeye fry from the Snettisham Hatchery facility back to the Canadian lakes took place between May 25 and June 21, 2012. Spring, ice-out conditions and fry transport timing for the lakes was on-par with the past several years, with the exception of Tuya Lake, which was ten days later than the previous five-year average. Slightly over 5.6 million fry were released in the Canadian Tahltan, Tuya, and Tatsamenie Lakes.

All fry transported to Tahltan Lake were held in net pens for 24 hours prior to being released into the lake. Fry transported to the other two lakes (with the exception of the Tatsamenie "extended rearing group") were released directly from the aircraft into the lakes. Release of all Tatsamenie Lake fry occurred at the north end of the lake.

The Tatsamenie Lake extended rearing fry group was incubated and reared on heated water to achieve a 0.60 g weight goal. The heated water accelerated development during the incubation period facilitated early feeding as well as increased growth during the start-up rearing period. Growth and survival was good.

There were seven Tahltan Lake stock incubators of brood year 2011 fry lost to the IHN virus this season, resulting in a loss of 1.42 million fry. This is the fourth year in a row with IHNV losses and, while mildly disturbing, the losses due to this virus are consistent with Alaska's experience with sockeye culture.

Table 9. Summary of numbers and survival rates of Brood Year 2011 sockeye salmon fry released May-June 2012. Fish were raised at Snettisham Hatchery as part of the Transboundary River Salmon Enhancement Project.

Brood stock	Release site	Number of vats	Survival rate to eyed stage	Survival rate to release	Number released
Tahltan	Tuya Lk	4	86.4%	71.3%	1,596,000
Tahltan	Tahltan Lk	4	85.4%	62.8%	2,126,000
Tatsamenie	Upper Tats Lk	3	90.9%	85.3%	1,849,000
Tatsamenie	Extended rearing	1	93.5%	93.2%	244,000
	Averages/Totals	12	87.7%	64.8%	5,815,000

Brood year 2012 TBR egg takes were initiated on August 31 at Tahltan Lake, September 15 at King Salmon Lake, and September 17 at Tatsamenie Lake. An estimated total of 7.5 million green eggs were collected from the three donor lakes.

Tahltan Lake egg takes were completed on September 28 with an estimated 5.24 million eggs in 12 egg lots. Based on assumed fecundities, the egg take goal for brood year 2012 was not met. Two lots of Tahltan eggs were delayed by one day and of another four lots by two days.

Tatsamenie Lake egg takes were completed on October 6 with an estimated 3.02 million eggs. A total of four lots were received at Snettisham Hatchery. The arrival of the Tatsamenie eggs was delayed by one day due to poor weather conditions.

Egg collection for the newly added King Salmon Lake program was conducted on September 15, and an estimated 234,000 eggs were received.

During the 2012 season, the ADF&G Thermal Mark Lab processed 19,085 otolith otoliths collected by ADF&G and DFO staff as part of the U.S./Canada fry planning evaluation program. These collections came from commercial and test fisheries in both U.S. and Canadian waters on the Taku and Stikine Rivers over an 11-week period. In addition, several escapement samples were examined. The laboratory provided estimates on hatchery contributions for 56 distinct sampling collections. Estimates of the percentage of hatchery fish contributed to commercial fishery catches were provided to ADF&G and DFO fishery managers 24 to 48 hours after samples arrived at the lab.

Stock River Area Fisheries

Although harvest sharing arrangements of Stock salmon stocks between Canada and the U.S. have not been specified, Annex IV of the Pacific Salmon Treaty does call for a cooperative attempt to rebuild depressed Chinook and early-run sockeye stocks.

Because the bottom end of the Chinook salmon escapement goal of 1,200 fish in place at the time of the fisheries was not attained in 2007 through 2009 the test fishery was suspended in 2009 and 2010 to facilitate Chinook salmon escapement. Escapements improved in the past three years and were within the desired objectives. The test fishery for Chinook salmon was conducted again in 2012. The 2012 test fishery opened on May 21 (week 21) and closed on June 30 (week 26). A total of 251 Chinook salmon were harvested (harvest quota maximum of 500 fish).

The 2012 Chinook salmon run was expected to produce fish surplus to the Klukshu River escapement goal. The 2012 overall Stock drainage sockeye salmon run was expected to be approximately 71,000 fish, due to well below the recent 10-year average of 90,500 fish. Recent sockeye and Chinook salmon returns have been below average, primarily due to poor marine survival, and this forecast was viewed with some caution. The principle contributing brood years were 2007 (Klukshu escapement of 8,950 sockeye salmon) and 2008 (Klukshu escapement of 2,753 sockeye salmon).

Both the early and late run segments of the Stock sockeye run were above average in 2012. The current data pertinent to the escapement goal of 7,500 to 15,000 sockeye salmon through the Klukshu weir was recently re-examined and a new BEG was adopted in 2011. As a result of this analysis, Canadian and U.S. managers have set a spawning escapement goal range of 7,500 to 15,000 sockeye salmon. The Department of Fish and Game will manage the Stock River commercial set gillnet fishery to achieve the agreed upon escapement goal range plus 1,000 sockeye salmon in accordance with the 2009-2018 agreement reached during the U.S./Canada Pacific Salmon Treaty (PST) negotiations in February 2008.

In 2012 the Stock River commercial set gillnet fishery was managed traditionally by monitoring fishery performance data and comparing it to historical CPUE for a given opening to adjust time and area openings. The duration of weekly fishing periods were based on fishery performance data (CPUE) and Klukshu weir data. Historically, gillnets have been restricted to a maximum mesh size of 6 inches through July 1 to minimize Chinook salmon harvest. In 2012 there was no mesh restriction. Adjustments to in-season fishing regimes in the fisheries would be made if deemed necessary. Fishing times could be

[illegible]

Table (A) Monthly Sibling Effect and attitude data use for Abuja Metro, 2021.

Statement Month	Item Title	Count					Effect		% Cost Effect
		Cultural	Resilience	Cube	Pride	Chart	Economy	Effect	
07	Cheap	30	112	0	0	0	0	1	0
08	Unique	4.0	1,048	0	0	0	0	1	00
01	Cheap	0.0	1,004	0	0	0	0	1	00
05	Unique	0	1,000	0	0	0	0	1	00
07	Cube	10	1,007	0	0	0	0	1	00
00	Unique	0	1,070	0	0	0	0	1	0
05	Cheap	1	000	1	0	0	0	1	0
00	Chart	0	1,000	0	0	0	00	1	00
0	Unique	0	000	0	0	0	0	1	0
0–04	Cheap	0	000	00	0	0	0	1	0
05–09	10 Cheap	0	0	000	0	1	0	0	00
Total		110	10,117	100	0	1	00	00	100
2000–2010 Cheap		000	0,000	1,000	0	1	0	0	000
2010 on Cost Cheap		10.0%	1.0%	10%	0%	10%	00%	00%	1.0%

Note: Cube Cheap Unique Metro, pressure, confidence interval, sensor, cube, residual, cost, unit.

Southeast Alcalde Chinook Salmon Pottery

Of Iron Harvest

The Chinook Technical Committee of 2011 of the PMC recommend that the Chinook abundance salmon for Southeast Alaska for 2012 is 1,113. This escapement salmon equated to a 40 percent spawner of 30,000 Coho Chinook salmon, which is about 30,000 fish less than the 2011 update.

This was the fourth year that the Annex IV, Chapter 3 provisions of the 1985 PST agreement were implemented. Therefore, the harvest allocations for 40,000 effected a 15% reduction in allowable catch from that allowed under the 1999 PST agreement. The preliminary estimated total Chinook salmon harvest, including landing mortality, for all Southeast Alaska commercial fisheries was 450,000 fish and the preliminary sport fish harvest was 30,000. As an all-gear total harvest of 450,000 fish is 15% below the preliminary all-gear Coho harvest was 30,000 fish, 150% below the all-gear total quota of 300,000.

[illegible]

The spring troll fisheries target Alaskan hatchery-produced Chinook salmon and are conducted along migration routes or close to hatchery and release sites. Terminal area fisheries, which begin during the spring, occur directly in front of hatcheries or at remote release sites. While there is no ceiling on the number of Chinook salmon harvested in the spring fisheries, the take of treaty Chinook salmon is limited according to the percentage of the Alaskan hatchery fish taken in the fishery. In 2012, spring troll fisheries were conducted from May 1–June 30 in a total of 31 spring areas and six terminal area fisheries. The combined spring and terminal troll harvest was 25,549 Chinook salmon, the Alaska hatchery catch was 10,358 (41%) of which 8,446 counted toward the Alaska hatchery add-on, resulting in a treaty harvest of 16,760 (Table 13).

The 2012 summer troll fishery included two Chinook salmon retention periods. From July 1–9, a total of 61,067 Chinook salmon were harvested, of which 1,814 (3%) were of Alaskan hatchery origin with 1,457 counted toward the Alaska hatchery add-on, resulting in a treaty catch of 60,210 fish.

In the second summer retention period, from August 11 to September 8, a total of 74,249 Chinook salmon were harvested, of which 3,009 (4%) were of Alaskan hatchery origin and 2,545 counted toward the Alaska hatchery add-on, resulting in a treaty harvest of 71,704 fish.

The total of 135,927 Chinook salmon were harvested in the summer troll fishery, of which 4,983 were of Alaskan hatchery origin and 4,002 counted toward the Alaska hatchery add-on, resulting in a treaty harvest of 131,839. A total of 1,012 permits participated in the summer fishery.

The total harvest for all troll fisheries in the 2012 accounting year was 209,366 Chinook salmon, with 191,839 counting as treaty harvest.

Table 13. Preliminary 2012 troll fishery Chinook salmon harvest by season.

Gear/Fishery	Total Harvest	Alaska Hatchery Harvest	Alaska Hatchery Add-on	Terminal Exclusion Harvest	Total Term. Exclusion/ Alaska Hatchery Add-on	Treaty Harvest
Winter Troll	47,808	5,807	4,736	0	4,736	43,153
Spring Troll	25,549	10,358	8,446	343	8,789	16,760
Summer Troll						
First Period	61,067	1,814	1,457	0	1,457	60,210
Second Period	74,249	3,169	2,545	0	2,545	71,704
Summer Total	135,927	4,983	4,002	0	4,002	131,839
Total Traditional Troll	209,364	21,237	17,184	343	17,527	191,837
Annette Is. Troll	2	0	0	0	0	2
Total Troll Catch	209,366	21,237	17,184	343	17,527	191,839

Note: The Alaska hatchery add-on and treaty numbers will be revised when 2012 sport catch estimates are received.

Net Fisheries

With the exception of directed gillnet harvests of Chinook in SEAK terminal area regulatory Districts 108 and 111 targeting Chinook as provided in the Transboundary river agreement (Chapter 11), harvests of Chinook salmon in the net fisheries are primarily incidental to the harvest of other species and only constituted a small fraction (<1.0%) of the total net harvest of all species.

For the Taku River, the 2012 preseason terminal run forecast was 48,036 large adult Chinook salmon allowing for a U.S. allowable catch (AC) of 6,703 fish. Drift gillnet fisheries were opened for 12 hours in both week 19 (May 6-12) and week 20 (May 13-19) and a total of 174 Chinook salmon were landed by 20 boats. The AC was adjusted as in-season information on run strength became available. The first in-season estimate of Taku River Chinook salmon run strength was generated in week 20 and was considerably below the preseason forecast, providing no allowed catch for further fisheries. The third estimate of run strength was generated in week 22 and projected a terminal run size of 10,600 large Taku Chinook, well below forecast and the 19,000 fish minimum of the escapement goal range.

The preseason forecast for Chinook salmon returning to the Stikine River was approximately 40,800 fish. The resulting U.S. AC was 5,890 large Stikine Chinook salmon. This forecast was above the midpoint of the escapement goal range of 21,000 large Chinook upon which the preseason harvest allocations are based. A directed Stikine River Chinook salmon commercial fishery began May 7 in District 108 in 2012 and was the first directed U.S. commercial fishery for Stikine River Chinook salmon since 2008.

The directed Chinook salmon fishery in District 108 was open for one day each week in weeks 19-21, harvests were weaker than anticipated with a total catch for this period of 450 fish. The first in-season forecast of 29,300 Stikine River Chinook salmon was substantially less than the preseason forecast and resulted in a U.S. allowable catch too small to allow further directed commercial fisheries and the district was closed until the beginning of the sockeye salmon fishing season.

Preliminary harvest of treaty Chinook salmon in the Southeast Alaska seine fisheries was 5,994 fish.

Recreational Fisheries

The preseason abundance index generated for the SEAK AABM fishery in spring 2012 was 1.52, resulting in a preseason sport allocation of 48,318 treaty Chinook under the harvest management plan adopted by Alaska Board of Fisheries. Based on this pre-season AI and the SEAK King Salmon Management Plan, a sport fish angler was allowed to use two rods from October through March, the bag and possession limit for residents was three fish 28 inches or over in length and no annual limit, and for non-residents the bag and possession limit was two fish 28 inches or greater in length in May 2012 and one fish 28 inches or greater in length during April 2012 and from June 2012 through April 2013, with a 4 fish annual limit.

The 2012 recreational fishery had an estimated preliminary harvest of 46,520 Chinook salmon of which 36,681 counted as Treaty harvest. The final total and Treaty harvest in the sport fishery for 2012 will be available in late fall of 2013. Comparisons of the 2012 recreational fishery harvest with recent years indicate that the preliminary harvest of 46,520 fish is 26% below the recent five-year average and 33% below the recent ten-year average. The 2012 freshwater recreational fishery for Chinook salmon 20 inches or greater in length in the Situk River near Yakutat was closed all season due to low abundance of large fish, and Chinook salmon 20 inches or greater could not be removed from the water if incidentally caught. Onsite creel surveys indicated no large Chinook were harvested and a small number (<50 total) of Chinook less than 20 inches were harvested in 2012.

During 2012, genetic samples were collected from 3,752 large Chinook salmon (28 inches of greater in Total Length), 66 genetic samples from small Chinook salmon (under 28 inches in TL) in Terminal Harvest Areas (THAs), and 12 genetic samples were collected from small Chinook salmon harvested outside of THAs.

Southeast Alaska Coho Salmon Fisheries

Attachment B of the June 30, 1999 U.S.-Canada Agreement relating to the Pacific Salmon Treaty specifies provisions for in-season conservation and information sharing for northern boundary coho salmon. In 2012, troll CPUE in Area 6 in the early weeks of the fishery averaged 54, which was well above the highest boundary area conservation trigger of 22. The mid-July projection of region-wide total commercial harvest was greater than the 1.12 million trigger for an early region-wide troll closure, specified in Alaska Board of Fisheries regulation and the PST conservation agreement.

The 2012 all-gear catch of coho salmon totaled 2.06 million fish of which 1.88 million (91%) were taken in commercial fisheries (Table 14). The troll catch of 1.20 million fish was 81% of the 10-year average of 1.48 million fish and accounted for 64% of the commercial catch. Average weekly power troll wild coho CPUE was 2% below the 10-year average while overall region wild stock abundance was estimated at 5% below the 1982–2011 average. The purse seine harvest of coho salmon (280,100 fish) was 9% below the 10-year average while the drift gillnet harvest of 303,000 fish was 17% below average. The set gillnet harvest of 98,700 fish in the Yakutat area was 24% below the 10-year average, with 49% of the catch taken in the Situk-Ahrnklin Lagoon and 46% in the Tsiu River system. A very preliminary estimate of the Southeast Alaska sport catch (176,800 fish) was 35% below the 10-year average and accounted for 9% of the combined region catch (below the 10-year average of 11%).

Wild production accounted for 1.44 million fish (76%) in the commercial catch compared with a recent 10-year average of 1.84 million fish (80%). The hatchery percentage of the commercial catch (24%) was the 3rd highest on record after 2011 and 2002. Of the estimated hatchery contribution of 443,100 fish, over 99% originated from facilities in Southeast Alaska. Escapement counts and estimates were within or above goal in nearly all cases throughout the region. The combined peak count in the 14 surveyed streams in the Ketchikan area of 11,950 spawners was well above the goal of 4,250-8,500 spawners. The total escapement of 1,908 spawners to Hugh Smith Lake was the 5th consecutive annual escapement above the biological goal range (500-1,600 spawners). The strong escapement to Hugh Smith Lake resulted from a low-to-moderate exploitation rate (preliminary estimate = 53%) on a total run estimated at 4,034 adults that was almost exactly equal to the historical (1982–2011) average. The estimated return was the product of slightly above-average smolt production (32,300 smolts) and slightly below-average marine survival (12.1%).

Marine survival was far below average for northern Southeast stocks. Survival for Auke Creek, the Berners River and the Chilkat River averaged 7.7% (range 5.3–10.3%) compared with a 10-year mean-average of 14.3%. Ford Arm Creek presmolts survived at a rate of 7.2% compared with a 10-year average of 11.5%. Exploitation rate estimates were low to moderate for all indicator stocks. The Ford Arm Creek stock was exploited at an estimated rate of 63%, slightly above the long-term average of 61%, with a below-average Alaska troll exploitation rate (47%) offset by the 3rd highest seine exploitation rate on record (14%). In contrast, the estimated all-gear exploitation rate on the Hugh Smith Lake stock of only 53% continued the trend toward lower all-gear exploitation rates for that system, from an average of 75% in the 1990s to 52% during 2000–2011. The Alaska troll fishery exploitation rate on the stock was only 20%, the 3rd lowest rate on record and well below the historical average of 35% during 1982–2011 and the decade peak average of 41% in the 1990s. The Alaska troll fishery exploitation rate on the Auke Creek stock was estimated at only 20% in 2012 compared with a 10-year average of 25% and a long-term average of 29%. The all-gear exploitation rate on that stock was estimated at 22% compared with a long-term average of 40%.

The 2012 region-wide summer troll coho fishery began on July 1. There was a mid-season closure during August 7-10 and the fishery was extended for 10 days past the September 20 in all areas except the northern inside migration corridor (to protect a weak wild coho returns to Lynn Canal streams).

Table 14. Coho salmon harvest in Southeast Alaska in 2012 by gear type (preliminary).

Gear Type	Harvest
Troll	1,200,900
Purse Seine	280,100
Drift Gillnet	303,000
Set Gillnet	98,700
Sport (marine and freshwater)	176,800
Total	2,059,500

Preliminary 2012 Chinook And Coho Salmon Catches In Washington And Oregon Fisheries

Introduction

This report describes the conduct of United States (U.S.) fisheries of interest to the Pacific Salmon Commission (PSC) that occurred during 2012 in the area north of Cape Falcon, Oregon and south of the U.S./Canada border. These fisheries were conducted under pre-season management plans that were consistent with Annex IV of the Pacific Salmon Treaty (PST, 2008) including obligations defined within Chapter 3 for Chinook individual stock based management regimes (ISBM) and Chapter 5 for Southern Coho Management.

An overview of the Chinook and coho salmon conservation challenges facing managers during the 2012 pre-season planning process in this region is provided. The conduct of major fisheries is described, and estimates of landed catch, where available, are compared to pre-season catch limits or expectations for Chinook and Coho. For perspective, catches for those fisheries since 2007 are also presented. Catch estimates for the 2012 fisheries are preliminary and subject to change. Estimates of spawning escapements and abundance of Coho and Chinook stocks are not available at this time.

Pre-season Planning

Pre-season planning for southern U.S. fisheries of interest to the PSC is a coordinated activity involving Tribal, State and Federal management entities, with the involvement of conservation and fishing interests. The Pacific Fisheries Management Council (PFMC) conducts a series of public meetings to consider options for ocean fishery season structures while the Tribes and States conduct government-to-government and public, open meetings throughout the region to construct and analyze season options for fisheries in the inside waters of the Columbia River, coastal Washington and Puget Sound. Participants in these various planning sessions evaluate the biological and socio-economic consequences of options for the outside (ocean) and inside (marine and freshwater) fisheries, including the anticipated impacts on U.S. southern origin stocks in fisheries conducted under the PST in Canada and Southeast Alaska. The final product is a complete set of fishery plans constructed to achieve conservation goals, domestic fishery objectives, and legal obligations including the PST, assuming fisheries are conducted as planned and pre-season abundance estimates are accurate.

Chinook Salmon Management:

Under the 2008 Pacific Salmon Treaty Agreement, southern U.S. fisheries are subject to the Individual Stock Based Management provisions of Annex IV, Chapter 3. These provisions require the non-ceiling index for aggregated Southern U.S. fisheries on Chinook stocks not achieving their management objectives to be no greater than 60% of the levels estimated for the 1979 – 1982 base period.

Conservation obligations associated with the U.S. Endangered Species Act (ESA) for threatened and endangered Chinook salmon stocks originating from Puget Sound and the Columbia River have been more constraining to southern U.S. fisheries than PST obligations. Catch quotas for the 2012 U.S. ocean fisheries in the area north of Cape Falcon, Oregon, were defined by the impact limits on ESA-listed lower Columbia River natural tule fall Chinook stocks and the abundance of other healthy, harvestable stocks in the area. Puget Sound fishing seasons were structured to provide fishing opportunity on healthy salmon species or stocks within the impact limits defined for ESA-listed Puget Sound Chinook.

Coho Salmon Management:

During the pre-season planning process of 2012, Canadian fishery managers informed the U.S. that the Interior Fraser management unit was again expected to be in the low categorical abundance status, and U.S. fisheries were constrained to ensure that the exploitation rate on this management unit did not exceed 10.0% as defined by the PST Southern Coho Management Plan. All U.S. natural spawning Coho management units specified by the PST Southern Coho Management Plan were forecasted to be in moderate or abundant status.

The impact on natural Coho stocks of seasons and catch limits adopted for southern U.S. fisheries were predicted using the Fisheries Regulation Assessment Model (FRAM). The total exploitation rate on the Interior Fraser management unit was predicted to be 9.9% in Southern U.S. fisheries. Seasons and Coho quota levels for U.S. ocean fisheries were constrained primarily by the management objectives of ESA-listed lower Columbia River natural Coho, while limits to fisheries in northern Puget Sound and the Strait of Juan de Fuca were primarily constrained by management objectives for the Interior Fraser Coho management unit.

North of Cape Falcon Ocean Fisheries

Fisheries in this area are managed to meet conservation objectives for ESA listed stocks, natural stocks and brood stock goals for hatchery stocks. Within these stock management objectives, ocean fishing seasons are defined that meet legal requirements of Tribal treaties and allocations between Non-Tribal troll and sport fisheries. Ocean fishery seasons are also constructed to ensure a balance of opportunity for harvest with the inside fisheries. Lower Columbia River hatchery Coho and Columbia River hatchery fall Chinook have historically been the major stocks contributing to catches of ocean fisheries in the North of Cape Falcon area.

Chinook and Coho salmon catch quotas were defined for the 2012 ocean Tribal, Non-Tribal troll and sport fisheries. Ocean fishery quotas for Chinook salmon were defined by the total exploitation rate limit of 41% on ESA-listed lower Columbia River natural tule fall Chinook stocks in all fisheries. Ocean fishery quotas for Coho salmon were defined by the impact limits of ESA-listed lower Columbia River natural Coho, Interior Fraser Coho management units, and agreements that allocated the total allowable impacts between ocean and inside fisheries.

Non-Tribal Troll Fishery

Pre-season quota levels for the non-Tribal troll fisheries were 47,500 Chinook and 13,300 Coho (with healed ad-clip, hereinafter referred to as marked). The preliminary estimates of non-Tribal harvest in the 2012 North of Falcon troll fishery are 47,400 Chinook, (99% of the coast-wide quota), and 2,400 Coho (18% of the coast-wide quota). Trollers harvested 30,758 Chinook in the May 1 – June 30 Chinook-only fishery and the remaining 16,615 Chinook were harvested in the all-species fishery between July 1 and September 15. The Coho catch represents harvest in a mark-selective fishery.

Tribal Troll Fishery

The Tribal troll fishery (also known as the Treaty troll fishery) was restricted due to conservation concerns for ESA listed Lower Columbia River tule Chinook and Mid-Hood Canal Chinook, setting the Chinook quota at 55,000. The Coho quota was constrained by management objectives for Interior Fraser Coho, creating a Coho quota of 47,500. The season was comprised of a May/June Chinook-directed fishery and a July 1 through September 15 all species fishery. The Chinook quota was split 50:50 between the two fisheries. The Chinook-directed fishery ran through all of May and June and took 96% of the 27,500 Chinook sub-quota. The Tribal trollers made 415 landings during this fishery. The all species fishery had an impact neutral transfer from the Chinook-directed fishery of 902 Chinook. This increased the sub-quota to 28,402 Chinook. The all-species fishery ran the entire period, taking 99% of the Chinook quota and 78% of the Coho quota. The season concluded with a total catch of 54,467 Chinook (99% of the quota) and 37,021 Coho (78% of the quota). The Tribes made 933 landings during the ocean Tribal troll season.

Sport Fisheries

Pre-season quotas for the sport fishery were 51,500 Chinook (non mark-selective equivalent of 47,500) and 69,720 marked Coho. The 51,500 Chinook quota included 8,000 in the June mark-selective fishery and 43,500 in the non-selective fishery. Preliminary total catch estimates for the ocean sport fisheries north of Cape Falcon were 35,300 Chinook (69% of the coast-wide quota) and 33,000 Coho (76% of the coast-wide quota). A description of the resulting season structure and catches by management area follows.

U.S./Canada border to Cape Falcon

Sport salmon fishing was open for all species except Coho from June 16 – 30 from the U.S./Canada border to the Queets River, from June 9 – 23 between the Queets River and Leadbetter Point, and from June 9 – 22 from Leadbetter Point to Cape Falcon operating under a coastwide quota of 8,000 marked Chinook. The catch estimate for the coastwide mark-selective sport fishery is 7,600 Chinook (95% of the quota). The Chinook minimum size limit was 24 inches.

Preliminary estimates of Chinook retained and the percentage of legal size Chinook encountered that were retained and released in the Chinook mark-selective sport fishery, June 9 – 30, 2012, for Areas 1-4 combined.

Chinook retained	Retained %	Released
7,600	69%	3,400

A detailed report of this fishery, including catch, effort and results of sampling and monitoring programs, will be available from the Washington Department of Fish and Wildlife in early 2013.

Columbia Ocean Area (including Oregon)

All-species salmon sport fishing opened in Ocean Area 1 (Columbia Ocean Area) on Saturday, June 23 with a quota of 34,860 marked Coho and a guideline of 11,100 Chinook. Beginning September 3, the fishery was non-selective for Coho (remaining sub-area Coho quota – 25,000 fish – was converted at an impact neutral rate to a non-selective Coho quota of 9,500). The fishery closed on its automatic closure date, September 30. The catch estimates for Area 1 are 7,500 Chinook (68% of the guideline) and 10,000 Coho during the selective portion of the fishery (27% of the mark-selective quota). An additional 1,300

Chinook were harvested in the spring mark-selective fishery. The Chinook minimum size limit was 24 inches, with a sub-area closure in the Columbia Control Zone.

Preliminary estimates of Coho encounters (retained and released), and mark rate in the Area 1 Coho mark-selective sport fishery, June 23 – September 2, 2012.			
Coho retained	Coho released	Total encounters	Mark %
10,000	16,100	26,100	38%

Westport

Ocean Area 2 (Westport) opened for all-species salmon sport fishing on Sunday, June 24 with a quota of 25,800 marked Coho and a guideline of 25,600 Chinook. Beginning September 1, the fishery was non-selective for Coho (remaining sub-area Coho quota – 19,000 fish – was converted at an impact-neutral rate to a non-selective quota of 9,000). The fishery closed on its automatic closure date, September 23. The catch estimates for Area 2 are 14,000 Chinook (55% of the guideline) and 6,700 Coho during the selective portion of the fishery (26% of the mark-selective quota) and 5,200 Coho during the non-selective portion of the fishery (58% of the non-selective quota). An additional 5,400 Chinook were harvested in the spring mark-selective fishery. The Chinook minimum size limit was 24 inches.

Preliminary estimates of Coho encounters (retained and released), and mark rate in the Area 2 Coho mark-selective sport fishery, June 24 – August 31, 2012.			
Coho retained	Coho released	Total encounters	Mark %
6,700	15,200	21,900	31%

La Push

Ocean Area 3 (La Push) opened for all-species salmon sport fishing on Sunday, July 1 with a quota of 1,810 Coho (revised in-season to 2,360 following impact-neutral transfers of Coho from the Neah Bay sub-area quota and the Non-Tribal troll fishery to the La Push sub-area quota) and a guideline of 2,100 Chinook. The fishery closed on its automatic closure date, September 23, and reopened September 29 through October 14. The catch estimates for Area 3 during the all-species fishery are 1,200 Chinook (58% of the guideline) and 2,200 Coho (95% of the revised quota). An additional 100 Chinook were harvested in the spring mark-selective fishery. The Chinook minimum size limit was 24 inches.

Preliminary estimates of Coho encounters (retained and released), and mark rate in the Area 3 Coho mark-selective sport fishery, July 1 – October 14, 2012.			
Coho retained	Coho released	Total encounters	Mark %
2,200	5,700	7,900	28%

Neah Bay

Ocean Area 4 (Neah Bay) opened for all-species salmon sport fishing on Sunday, July 1 with a quota of 7,250 marked Coho (revised in-season to 8,200 following impact-neutral transfers from the Non-Tribal troll fishery to the Neah Bay sub-area, and from the Neah Bay sub-area quota to the La Push sub-area quota) and a guideline of 4,700 Chinook. The fishery closed on its automatic closure date, September 23. The catch estimates for Area 4 are 4,700 Chinook (100% of the guideline) and 7,600 coho (92% of the quota). An additional 800 Chinook were harvested in the spring mark-selective fishery. The Chinook minimum size limit was 24 inches.

Preliminary estimates of Coho encounters (retained and released), and mark rate in the Area 4 Coho mark-selective sport fishery, July 1 – September 23, 2012			
Coho retained	Coho released	Total encounters	Mark %
7,600	14,000	21,600	35%

North of Cape Falcon Inside Fisheries

Washington Coastal River Fisheries

North Washington Coastal Rivers

Net and sport fisheries directed at salmon in this region were implemented based upon pre-season, Tribal-State agreements and subject to in-season adjustments. The north coastal rivers net harvest (all by Tribal fisheries that are non-selective) includes catch from the Quillayute system, Hoh, Queets, and Quinault Rivers. In 2012 the Copalis, Moclips, Oxette, and Sooes Rivers were removed from this report. The catch from these rivers is not a part of the pre-season modeling process. The 2012 commercial Tribal net fisheries in north coastal rivers have harvested an estimated 12,300 Chinook and 37,600 Coho through November 15, 2012.

Recreational fisheries conducted in the Quillayute, Hoh and Queets river systems, included mark-selective fisheries for hatchery Chinook salmon. Recreational fisheries for Coho salmon conducted in the Quillayute River system included mark-selective components. Harvest or impact estimates for these fisheries are unavailable at this time.

Grays Harbor

Harvest for Grays Harbor includes catch from both the Humptulips and Chehalis Rivers through November 15, 2012. The non-selective Tribal net fisheries in Grays Harbor, and including fisheries in the Humptulips and Chehalis rivers, harvested an estimated 4,000 Chinook salmon and 30,000 Coho salmon. Non-Tribal commercial fisheries conducted in the northern portion of Grays Harbor near the Humptulips River (2C) harvested 1,100 Chinook salmon and 400 Coho salmon. An additional 80 Chinook salmon (mark selective) and 9,900 Coho were harvested in the Non-Tribal commercial gillnet fishery in Areas 2A & 2D. Sport fisheries conducted in the Chehalis and Humptulips Rivers included mark-selective components for Coho salmon. Recreational fisheries harvest or impact estimates are unavailable at this time.

Columbia River Fisheries

Tribal and Non-Tribal net and sport salmon fisheries in 2012 occurred during the winter/spring (January – June 15), summer (June 16 – July) and fall (August – October) periods. All fisheries were constrained by impacts on ESA listed stocks. Winter/spring fisheries were primarily constrained by impacts on ESA listed upper Columbia River spring Chinook, Snake River spring/summer Chinook and wild winter Steelhead. Summer fisheries were constrained by impacts to ESA listed Snake River Sockeye. Fall fisheries were mainly constrained by impacts to ESA listed wild lower Columbia tule fall Chinook and wild lower Columbia River Coho as well as Group B Steelhead which are part of the Snake River Steelhead distinct population segment (DPS). Snake River wild fall Chinook can be a constraint to fall season fisheries, but impacts to other listed stocks generally limit fisheries first.

Columbia River salmon fisheries are developed and regulated to meet conservation standards. Fisheries are managed to operate within the impact limits set for ESA listed stocks, meet the objectives for healthy

Columbia River natural stocks, and ensure brood stock needs are met for hatchery salmon. Mainstem Columbia River fisheries are also developed and managed to remain within the requirements of the 2008 – 2017 US v. Oregon Management Agreement which include Tribal/Non-Tribal sharing agreements.

Winter-Spring Fisheries

Non-Tribal Net

The mainstem Winter/Spring commercial fishery has operated under mark-selective fishery regulations since 2002. Winter Sturgeon fisheries consisted of three fishing periods conducted during January 30 through February 7 in the area downstream of Bonneville Dam. A total of one hatchery Chinook was landed. The winter/spring salmon season consisted of two fishing periods (39 hours total) on April 1 and April 10. Tangle nets (4½-inch minimum mesh) were required for both openings. The fishery occurred downstream of Bonneville Dam, with time, area, and gear restrictions in place for both openings. Landings included 6,200 hatchery spring Chinook.

Sport

Columbia River mark-selective sport fishery began in 2003. The area below Bonneville Dam was open January 1 – April 22 and May 26-27 for hatchery Chinook retention. Catch estimates include 13,300 hatchery Chinook. Mark-selective recreational fisheries also occurred during March 16 – May 6 and May 19 – 20 in the area from Bonneville Dam upstream to McNary Dam (Zone 6). Zone 6 catch estimates total 900 hatchery spring Chinook. Recreational fisheries in Washington waters of the Snake River harvested an estimated 2,400 adult hatchery Chinook.

Tribal

Tribal mainstem fisheries are not mark-selective. Tribal fisheries are conducted in the mainstem Columbia River from Bonneville Dam upstream to McNary Dam (Zone 6). Platform and hook and line fisheries also occur in accordance with MOA's in the area immediately below Bonneville Dam. No spring Chinook were harvested in the commercial winter season set-line Sturgeon fishery (January 1 – 31). Two chinook were harvested in the winter gillnet fishery (February 1 – March 31). Commercial and subsistence (C&S) fisheries include harvest from platform, hook and line, and gillnet fisheries through Tribal permits. Commercial sales were allowed for platform and hook and line caught fish beginning May 14. Harvest estimates from C&S and commercial fisheries total 17,600 spring Chinook. Fisheries are also conducted in Zone 6 tributaries and in Columbia and Snake River Tributaries upstream from McNary Dam. Tributary harvest (including Snake Basin harvest) is not reported in this document.

Summer Fisheries

Non-Tribal Net

Summer season fisheries are not mark-selective. One fishing period (8 hours total) occurred on June 17 – 18 in the area below Bonneville Dam. Time, area, and gear restrictions were in place for all summer season commercial fisheries. Landings are estimated at 1,700 upper Columbia summer Chinook.

Sport

Summer season Chinook fisheries were mark-selective. The area below Bonneville Dam was open for adult Chinook retention from June 16 – July 1. An estimated 2,900 hatchery Chinook were kept during

the summer season below Bonneville Dam. The area from Bonneville Dam upstream to Priest Rapids Dam was open for adult hatchery Chinook retention from June 16 – July 31. Retained catch from this area was estimated at 100 adult hatchery upper Columbia summer Chinook. Harvest data for Wanapum Tribal fisheries downstream of Priest Rapids Dam and the Colville Tribal fisheries and the sport fishery in the Columbia upstream of Priest Rapids Dam are not available at this time. Harvest allocation and impacts by these Tribal fisheries were shared with the Non-Tribal fisheries.

Tribal

Tribal fisheries are not mark-selective. Tribal fisheries are conducted in numerous Columbia River from Bonneville Dam upstream to Michaw Dam (Zone 6). Platform and hook and line fisheries also occur in accordance with MOA's in the area immediately below Bonneville Dam. In 2015, four weekly commercial gillnet fishing periods were conducted June 16 – July 31. Platform and hook and line fisheries also occurred through July 31, and fish were sold commercially or retained for subsistence use. Harvest estimates total 7,800 upper Columbia summer Chinook from numerous fisheries. Minor summer season fisheries were also conducted in some Zone 6 tributaries and in tributaries upstream of Michaw dam. Tributary harvest is not reported in this document.

Fall Fisheries

Non-Tribal Net

Fall season fisheries are not mark-selective. The mainstem fisheries consisted of 24 fishing periods (274 hours total) during August 1 – 29 and September 10 – October 22. Time, area, and gear restrictions were in place. Harvest estimates total 17,600 fall Chinook.

Sport

Fall season fisheries were mark-selective for Coho salmon with a short pilot mark-selective period conducted for Chinook in an 80-mile stretch in the lower Columbia River. The three 10 Days was open August 1 through December 31. Chinook retention was prohibited September 8-30. Catch estimates include 19,100 Chinook and 7,300 hatchery Coho. The mainstem sport fishery from the Buoy 10/Rocky Point – Tongue Point line upstream to Bonneville Dam was open August 1 – December 31. Mark-selective rules for Chinook were in effect September 16-30 and Chinook retention was prohibited entirely during the September 17-30 from the Rocky Point – Tongue Point line upstream to the Lewis River. Catch estimates from this fishery include 25,100 Chinook. The mainstem sport fishery from Bonneville Dam to the Highway 395 Bridge near Pasco, Washington) was open August 1 – December 31. Catch estimates include 1,100 fall Chinook.

Tribal

Tribal fisheries are not mark-selective. Tribal fisheries are conducted in numerous Columbia River from Bonneville Dam upstream to Michaw Dam (Zone 6). Platform and hook and line fisheries also occur in accordance with MOA's in the area immediately below Bonneville Dam. Platform and hook and line fisheries were open and allowed commercial sales throughout the fall season. The commercial gillnet fishery consisted of seven weekly fishing periods August 29 – October 7. Preliminary harvest estimates total 67,400 fall Chinook. Fisheries are also conducted in some Zone 6 tributaries and in the Hanford and Clearwater Rivers. Harvest in tributary fisheries is not reported in this document.

Puget Sound Fisheries

Puget Sound marine fisheries of interest to the Pacific Salmon Commission in 2012 were regulated to meet conservation and allocation objectives for Chinook, Coho, Chum, and Sockeye salmon stocks per United States agreements. For Puget Sound Chinook, Sockeye, and Coho, fisheries were managed according to the Puget Sound Chinook Harvest Management Plan. This management plan includes in-river exploitation rates for natural stocks and was determined by the Technical Advisory Services (TAS) to be consistent with requirements specified under the ESA and Jones.

Relevant requirements were applied to treaty, sport and net fisheries for Chinook, Coho and Chum salmon. See letter to protect ESA-listed Hood Canal and Strait of Juan de Fuca summer Chum.

Puget Sound marine fisheries were constrained by the need to meet management objectives for ESA-listed Puget Sound Chinook, including mid-Hood Canal, Skokomish, Nooksack Early, Skagit Summer/Fall, and Upper River Chinook. Interior Fraser Coho was the primary Coho management unit of concern with managing fisheries in the Strait of Juan de Fuca and northern Puget Sound.

Strait of Juan de Fuca Sport

Chinook retention was selective (one adult per day) for sport fishing in Marine catch Management Areas 5 and 6 from February 16 – April 30, 2012. Sport fishing regulations allowed retention of hatchery Chinook and marked Coho beginning July 1. Chinook mark selective fishing agreements was reached in the period through August 31. The sport fishery remained open on a Chinook mark selective agreements through September 30 in Area 5 and through September 30 in Area 6. Wright Lake remained was kept September 1 – November 15 in Area 5 and October 1 – 31 in Area 6. Chinook retention was kept in Area 5 and 6 from October 1 – 31. An additional mark selective fishery for Chinook was open from November 1 – 15, 2012 in Area 6. The preseason estimate for Area 5 Chinook expected for the catch upstream fishing period July 1 – October 31 was 2,012. A preseason estimate of Coho also retained for the mark selective and non-selective upstream periods was 18,000.

Preliminary estimates of Chinook retained, released Kept and released (not kept) and the Total (ex. mark rate in the Area 5 sport mark selective fishery, July 1 – August 31, 2012.			
Chinook retained	Chinook released	Total encounters	Mark % Kept mark
1,678	1,1235	2,913	57%

Preliminary estimates of Coho retained, released and the mark rate in the Area 5 Coho mark selective sport fishery, July 1 – September 30, 2012.			
Coho retained	Coho released	Total encounters	Mark %
1,705	1,138	2,843	60%

A detailed report of this summer period sport fishery, including catch, effort and results of sampling and monitoring programs, will be available from the Washington Department of Fish and Wildlife in early 2013.

Strait of Juan de Fuca Tribal Troll (Area 4B, 5, and 6C)

Treaty Ay-ocean Tribal troll fishery in Areas 4B, 5, and 6C (December 1, 2011 – April 15, 2012), 1,000 Chinook and 1,0 also were caught. Both the catch and the effort in this fishery were below the recent twenty-year average. The summer Tribal troll fishery in Areas 5 and 6C July 1st – September 15th, 1,150 Chinook and 3,0 also were caught. The Tribal catch estimates from this area do not include catches

[illegible] during the [illegible] management periods, which have been included in the Needs and Gaps Analysis Update and summary.

Needs of Users by Study Site

[illegible] estimates of the 2010 needs of the Needs of Users by Study Site [illegible] are [illegible] of [illegible] to be: Needs of Users by Study Site [illegible] and [illegible].

Net User Benefit Test Answers — and [illegible]

[illegible] estimates of the 2010 needs of the Net User Benefit per Dollars discussed in the [illegible] and [illegible] and [illegible] and [illegible] the values for the Total Dollar [illegible]. Total Dollar [illegible] the [illegible] and [illegible] and [illegible].

Net User Benefit Over Years

Medical Network analysis was discussed in the notice was for the period November [illegible] 2010 [illegible] April 30, 2011. The numbers of Network contacts and research [illegible] during the [illegible] were compared to previous sampling programs with the assistance of the [illegible] Service. [illegible] report of the Policy, including eight offices and results of sampling and monitoring programs, is available from the Washington Department of Fish and Wildlife. The numbers and [illegible] Western Service [illegible] of the public was [illegible] April [illegible] 30, [illegible]. The [illegible] of a person Pages Needs Network [illegible] the remaining one was sent [illegible] of Network and [illegible] [illegible] Total Use [illegible] Service [illegible] [illegible] the statistic was required for the months of August through September. Additional site was chosen, as described in the Washington State Sport Fishing Study Template. Users' comments and sampling information for this area for the period May [illegible] November 30 are not available at this time.

| [illegible] Network [illegible] [illegible] [illegible] and [illegible] [illegible] [illegible]

Regal Grand Resort: both shows / spa hours combined listing (for 'I hear Lee Lawson is on the ship')

Day	Theater
Sun Mar 1	Lee Lawson 7:30 & 9:45 — Spa 8:00–18:00
Mon Mar 2	Lee Lawson 7:30 & 9:45 — Spa 8:00–18:00
Tue Mar 3	Lee Lawson 7:30 & 9:45 — Spa 8:00–18:00 (last day for Regal Grand)
Wed Mar 4	Rival Show 7:30 & 9:45 — Spa closed (transfer day)
Thu Mar 5	Rival Show 7:30 & 9:45 — Spa 8:00–18:00
Fri Mar 6	Rival Show 7:30 & 9:45 — Spa 8:00–18:00
Sat Mar 7	Rival Show 7:30 & 9:45 — Spa 8:00–18:00
Sun Mar 8	Rival Show 7:30 & 9:45 — Spa 8:00–18:00
Mon Mar 9	Rival Show 7:30 & 9:45 — Spa 8:00–18:00

Regal Grand Galaxy Star Lineup (v1.2)

Dr. Jessica Jones-Lewis, Marshall at Regal Grand Resort and Spa, was invited as a lifelong astronomy enthusiast to participate in the Galaxy Telescope Dedication Ceremony on March 3, 2026. It was attended by [redacted].

Regal Grand Mirror Patterns

Under an agreement Chief Lead Marcos Alvarez to address to the county and professional Board upon its return. Only Mary performed with Mary's work to a Lead Attendance. All 12 Mary to a Mary Board. It is to Chief Marcos Isolation was Mary to a Lead. Mary Mary Regal Grand Resort and Regal Grand.

Both shows, Marcos Alvarez at Grand, about one day assigned to the following Regal Grand. It is not MD. Grand's NYC submissions as Jessica Jones, a VIP group.

Grand's both shows / spa hours updated for Regal Grand (v.s. 3/1 only)
Mary	Details
Grand's MD	Saturday 7 – 10
Grand's MD (Regal)	Mary — Mar 3
Regal MD	Mary — Mar 3
Regal MD	Mary — Mar 3
Grand's MD	Mar — Wednesday 10
Marcos's MD	Regal — September 10

By both shows / spa hours was assigned to 3/1 to as Regal Grand. It is not MD. Only NYC submissions as Jessica Jones, a VIP group.

Table 15. Preliminary 2012 Landed Chinook Catches for Washington and Oregon Fisheries of Interest to the Pacific Salmon Commission (rounded to the nearest 100). [1]

FISHERIES	2012 Projection							
	Total Mortality [2]	Landed [3]	Preliminary Landed	2011	2010	2009	2008	2007
ORCAS FISHERIES								
Troll								
North Rip and La Push (Areas 3,4,4B) [4]	81,200	72,300	79,100	44,800	39,600	15,700	23,000	28,600
Columbia Ocean Area and Westport (Area 1&2)	59,000	50,200	16,600	16,300	49,000	9,600	11,900	10,200
Sport (see text for quota information)								
North Rip (Area 4) [5]	5,900	5,200	5,300	3,000	5,300	2,400	1,400	1,500
La Push (Area 3) [5]	2,600	2,300	1,300	1,500	1,200	700	700	600
Westport (Area 2) [5]	36,800	32,200	19,400	19,000	27,000	5,000	9,600	5,200
Columbia Ocean Area (Area 1) [5]	13,100	11,600	9,100	7,200	7,200	5,200	3,700	2,200
INSIDE FISHERIES								
Sport [6]								
Juan De Fuca (Areas 5&6) [7]	13,000	8,200	6,015	11,100	11,500	10,200	4,800	6,200
San Juan Is. (Area 7)	9,200	5,600	n/a	6,100	3,200	4,200	5,800	5,000
Puget Sound (Area 8-13)	36,700	25,700	n/a	14,700	17,000	16,900	21,700	37,600
Puget Sound Recon [7]	16,700	15,900	n/a	19,000	15,600	14,400	15,300	19,400
North W.S Coastal Recon	n/a	n/a	n/a	2,300	1,300	900	800	700
Grays Harbor [7]	n/a	n/a	n/a	3,500	2,200	900	0	1,700
Columbia R. (Spring) [7]	n/a	n/a	16,600	14,000	32,600	17,200	22,100	7,800
Columbia R. (Summer) [7]	n/a	n/a	3,200	5,400	2,600	2,500	3,200	2,700
Columbia R. (Fall) (incl. Recr. 10) [7]	n/a	n/a	49,500	43,300	27,100	24,200	22,200	14,600
Commercial [8]								
Strait Juan de Fuca (Areas 4B,5,6C) net and troll	11,700	10,000	4,000	4,200	4,400	3,600	6,400	4,500
San Juan Island (Areas 6,7, 7A)	6,200	6,200	500	5,800	6,800	1,000	100	2,600
Puget Sound Marine (Areas 8-13,7B-D)	51,600	50,500	75,000	65,500	45,300	44,700	61,000	64,200
Puget Sound Recon [7]	45,300	45,300	30,400	33,200	36,000	33,100	40,800	55,700
North W.S Coastal Recon	n/a	n/a	12,300	11,800	9,000	10,500	7,800	5,500
Grays Harbor (Area 2A-2D) [7]	n/a	n/a	4,000	8,000	4,600	3,400	2,600	3,000
Columbia R. Net (Mont/Spr.) [7]	n/a	n/a	23,900	20,100	32,000	17,300	27,100	8,500
Columbia R. Net (Sum) [7]	n/a	n/a	9,500	25,600	20,500	14,100	10,400	6,500
Columbia R. Net (Fall) [7]	n/a	n/a	173,200	165,700	165,800	153,600	134,700	49,000

Table 15 Footnotes:

1/ Nominal total mortality is not adjusted for adult equivalents (AEQ) and does include non-retention mortality. Total Mortality is estimated by FRAM as catch + incidental mortality, where incidental mortality = drop off + non-retention mortality.

2/ For the ocean fisheries, this column shows the Chinook troll and recreational quotas used for 2012 pre-season fishery planning as distributed by ocean area. Pre-season total troll quota is 102,500 and recreational Chinook quota 51,500. See text for any in-season adjustments.

3/ Includes Area 4B catch during the PFMC management period (May 1 – September 15); Area 4B Treaty troll catch outside PFMC period included under Strait Juan de Fuca net and troll.

4/ Includes catches from the spring mark selective fishery.

5/ 2012 catch represents July 1 – October 31 in Area 5 only, since Catch Record Card (CRC) annual estimates are not yet available.

6/ Mainstem retained sport catch only (upstream to McNary Dam for spring, Priest Rapids Dam for summer and to Hwy 395 for fall). See tables 22 – 23 in the annual Joint Staff Report regarding spring and summer Chinook and tables 29 – 31 in the annual fall report. http://wdfw.wa.gov/fishing/crc/staff_reports.html.

7/ Includes Grays Harbor catch, as well as catch from the Chehalis and Humptulips Rivers and their tributaries for sport and Lower Chehalis and Humptulips River for net estimates.

8/ Mainstem retained catch only (Columbia River mouth upstream to McNary Dam). Catch data from annual Joint Staff Reports. Winter and spring catch T7 and T18. Summer catch is from T10. Fall catch from annual fall report T20, 24 and 26.

9/ Includes catches from mark-selective fisheries where estimates are available.

10/ Sport catch after March 2009 is preliminary.

11/ Includes Non-Tribal and Tribal commercial, as well as Tribal Ceremonial and Subsistence for all gear types. Starting in 2012, the Copalis, Moclips, Ozette, and Sooes Rivers have been removed from the landed catch.

12/ Chinook fisheries in Puget Sound Rivers are modeled using the Terminal Area Management Module (TAMM), based upon FRAM output of terminal run sizes. Total Mortality is estimated in TAMM as catch + non-retention mortality.

Table 16. Preliminary 2012 Landed Coho Catches for Washington and Oregon Fisheries of Interest to the Pacific Salmon Commission (rounded to the nearest 100). 6/

	2012							
	Preseason							
FISHERIES	Total Mortality [1/]	Landed [2/]	Preliminary Landed	2011	2010	2009	2008	2007
OCEAN FISHERIES								
Troll								
Neah Bay and La Push (Areas 3,4,4B) [3/]	55,700	49,100	38,300	14,800	9,600	64,200	14,000	41,700
Columbia Ocean Area and Westport (Area 1&2)	22,000	11,700	2,400	2,200	5,000	29,200	2,400	16,700
Sport (see text for quota information)								
Neah Bay (Area 4)	9,400	7,300	7,600	3,000	3,700	13,300	2,200	10,600
La Push (Area 3)	2,300	1,800	2,200	2,100	1,200	6,900	500	2,800
Westport (Area 2)	34,100	25,800	12,000	13,800	12,600	53,900	7,500	23,000
Columbia Ocean Area (Area 1)	43,100	34,900	11,200	26,700	24,900	83,800	10,800	65,800
INSIDE FISHERIES								
Sport 7/								
Juan De Fuca (Areas 5&6) [4/]	47,700	40,900	44,500	32,700	20,600	32,900	11,400	33,900
San Juan Islands (Area 7)	800	700	n/a	900	600	800	200	600
Puget Sound (Area 8-13)	26,400	25,000	n/a	42,500	6,400	42,000	9,700	30,800
Puget Sound Rivers	24,300	23,100	n/a	40,400	9,600	41,200	15,000	32,100
North WA Coastal Rivers	6,400	6,100	n/a	7,400	5,500	6,600	1,500	1,700
Grays Harbor [5/]	21,000	20,000	n/a	14,400	12,300	15,900	3,300	4,400
Columbia River Buoy 10	10,300	8,300	7,500	7,600	8,000	48,100	8,600	8,400
Commercial 8/								
Strait Juan De Fuca (Areas 4B,5,6C) net and troll	3,400	3,300	3,600	2,800	3,300	3,300	1,200	2,600
San Juan Islands (Area 6,7,7A)	7,000	6,400	10,500	11,400	4,800	6,400	200	1,900
Puget Sound Marine (Area 8-13, 7B-D)	178,000	174,600	230,600	138,300	102,400	173,600	147,400	132,700
Puget Sound Rivers	75,900	74,400	104,300	103,900	64,400	92,800	85,400	85,400
North WA Coastal Rivers	99,200	97,200	37,600	84,500	97,100	126,500	50,200	26,800
Grays Harbor (Areas 2A-2D) [5/]	61,000	59,800	30,000	31,400	31,000	28,200	19,400	11,800

Table16 Footnotes:

1/ Estimates of total mortality include non-retention mortality. Total Mortality is estimated by FRAM as catch + incidental mortality, where incidental mortality = drop off + non-retention mortality.

2/ For ocean fisheries this column shows the coho troll and recreational quotas used for 2012 pre-season fishery planning as distributed by ocean area. Pre-season total troll quota is 60,780 and recreational marked Coho quota is 69,720. See text for any in-season adjustments.

3/ Includes area 4B catch during the PFMC management period (May 1 – September 15); area 4B Treaty troll catch outside PFMC period included under Strait Juan de Fuca net and troll.

4/ 2012 catch represents selective fisheries July 1 – October 31 in area 5 only, since CRC annual estimates are not yet available.

5/ Includes Grays Harbor catch, as well as catch from the Chehalis and Humptulips Rivers and their tributaries for sport estimates and Lower Chehalis and Humptulips Rivers for net estimates.

6/ Includes catches from mark-selective fisheries where estimates are available.

7/ Sport data after March 2009 are preliminary.

8/ Includes Non-Tribal and Tribal commercial, as well as Tribal Ceremonial and Subsistence for all gear types. Starting in 2012, the Copalis, Moclips, Quillie, and Sooes Rivers have been removed from landed catch.

Table 17. Mark Selective non-Tribal Chinook and Coho Fisheries by Area and Year. 1/

Selective Coho	2012	2013	2014	2015	2016	2017	2018
Ocean Troll							
Cape Flattery & Queets/Ocean 3 (J)	yes	yes	yes	yes	yes	yes	yes
Columbia R & Grays Harbor/Ocean 1,2)	yes	yes	yes	yes	yes	yes	yes
Ocean Sport							
Neah Bay/Ocean 4)	yes	yes	yes	yes	yes	yes	yes
LaPush/Ocean 5)	yes	yes	yes	yes	yes	yes	yes
Grays Harbor/Ocean 2)	yes	yes	yes	yes	yes	yes	yes
Col. R. (Leadbetter Pt. to Cape Falcon)	yes	yes	yes	yes	yes	yes	yes
Inside Fisheries							
Sport							
Juan de Fuca/Areas 5,6)	yes	yes	yes	yes	yes	yes	yes
San Juan Islands/Area 7)	yes	yes	yes	yes	yes	yes	yes
Puget Sound Sport/Areas 8-13 all year)	yes	yes	yes	yes	yes	yes	yes
Puget Sound Rivers	yes	yes	yes	yes	yes	yes	yes
North WA Coastal Rivers	yes	yes	yes	yes	yes	yes	yes
Grays/Quillayute & Willapa	yes	yes	yes	yes	yes	yes	yes
Columbia River Dsnc 10	yes	yes	yes	yes	yes	yes	yes
Commercial							
North WA Coastal Rivers	no	no	no	no	no	no	no
Grays Harbor/Areas 2A-2D)	no	yes	yes	yes	no	no	no
Strait of Juan de Fuca/Areas 4B,5,6C)/Set & Troll	no	no	no	no	no	no	no
San Juan islands/Areas 6,7,7A)	yes	yes	yes	yes	yes	yes	yes
Puget Sound Marine/Areas 8 – 13)	no	no	no	no	yes	no	no
Puget Sound Rivers	no	no	no	no	no	no	no
Selective Chinook	2012	2013	2014	2015	2016	2017	2018
Ocean Troll							
Cape Flattery & Queets/Ocean 3A-4B)	no	no	no	no	no	no	no
Columbia R & Grays Harbor/Ocean 1,2)	no	no	no	no	no	no	no
Ocean Sport							
Neah Bay/Ocean 4)	yes	yes	yes	no	no	no	no
La Push/Ocean 5)	yes	yes	yes	no	no	no	no
Grays Harbor/Westport/Ocean 2)	yes	yes	yes	no	no	no	no
Col. R.(Ocean (Leadbetter Pt. to Cape Falcon))	yes	yes	yes	no	no	no	no
Inside Fisheries							
Sport							
Juan de Fuca/Area 5,6)	yes	yes	yes	yes	yes	yes	yes
San Juan Islands/Area 7)	yes	yes	yes	yes	yes	no	no
Puget Sound Sport/Areas 8-13)	yes	yes	yes	yes	yes	yes	yes
Puget Sound Rivers	yes	yes	yes	yes	yes	yes	yes
North WA Coastal Rivers	yes	yes	yes	yes	yes	yes	yes
Grays Harbor (marine & freshwater)	yes	yes	no	no	no	no	no
Columbia River Sport – Winter/Spring	yes	yes	yes	yes	yes	yes	yes
Columbia River Sport – Summer	yes	yes	yes	no	no	no	no
Columbia River Sport – Fall	yes	no	no	no	no	no	no
Commercial							
North WA Coastal Rivers	no	no	no	no	no	no	no
Grays Harbor (Areas 2A – 2D)	yes	no	no	no	no	no	no
Columbia River Net – Winter/Spring	yes	yes	yes	yes	yes	yes	yes
Columbia River Net – Summer	no	no	no	no	no	no	no
Columbia River Net – Fall	no	no	no	no	no	no	no
Strait of Juan de Fuca/4B,5,6C)/Set & Troll	no	no	no	no	no	no	no
San Juan Islands/Areas 6,7,7A)	yes	yes	yes	yes	yes	no	no
Puget Sound Marine/Areas 8 – 13)	no	yes	yes	no	no	no	no
Puget Sound Rivers	yes	yes	no	no	no	no	no

Footnotes:

1/ "Yes" denotes that a mark selective fishery occurred, even if it only occurred in a subset of the fishing area, season, gear type, or user group.

Preliminary Review Of The 2011 Washington Chum Salmon Fisheries Of Interest To The Pacific Salmon Commission

This summary report provides a preliminary review of the 2011 U.S. Chum salmon fisheries conducted in the Strait of Juan de Fuca/Salmon Catch Areas 4B, 5 and 6C), the San Juan Islands (Areas 6 and 7) and the Point Roberts area (Area 7A), conducted in compliance with provisions of Chapter 4 of Annex IV of the Pacific Salmon Treaty. The harvest and abundance information provided are based on preliminary data reported through November 15 and is subject to correction and revision as additional information becomes available.

Mixed Stock Fisheries

Areas 4B, 5 and 6C

As in previous years, the Chum salmon fishery in Areas 4B, 5 and 6C was restricted to Treaty Indian fishers using gill nets. The fall Chum salmon fishery opened the week of October 9, with a schedule of six days per week and continued through November 10. A total of 148 Chum salmon were harvested. Including incidental catches of Chum salmon prior to the Chum-directed fishing season, 479 Chum salmon were harvested (Table 14). During the fall Chum fisheries in Areas 4B, 5, and 6C, there was a reported by-catch of 13 Steelhead, 1,749 Coho, and one Chinook.

Areas 7 and 7A

Chum salmon fisheries in Areas 7 and 7A are regulated to comply with a base harvest ceiling of 110,000 Chum salmon, unless a critically low level of abundance (< 1,000,000) is identified for those stocks migrating through fisheries. Strait of Juan de Fuca Chum Salmon. Chapter 4 of the Annex specifies that Chum-directed fishing is not allowed in Areas 7 and 7A before October 10. Paragraph 10 (a)(4) specifies run sizes below 1.0 million as defined by Canada as critical. For run sizes below the critical threshold, the U.S. catch of Chum salmon in Areas 7 and 7A will be limited to those taken incidentally to other species and to other mixed fisheries, and shall not exceed 20,000.

Paragraph 10 (d) says that if Canada provides an estimate of Fraser River run sizes below 900,000, then the U.S. will limit its fishery impacts to not exceed catch of 30,000 Chum salmon from the day following notification. U.S. commercial fisheries were initiated as scheduled on October 10.

An estimated Fraser River Chum salmon run size was provided by Canada on October 16, with an estimate of 1,000,000. The fishery was therefore continued without restriction through November 14. The U.S. catch between October 10 and November 14 in Areas 7 and 7A was 70,000 Chum salmon. The Non-Treaty gill net and purse seine fleets were open daily October 11, 14, 15, 17, 18, and then continuously October 21 through November 10. The Treaty Indian gill net and purse seine fisheries were opened on October 10, 12, 13, 16, 19, 20, and then on continuously from October 22 through November 14. Catches per vessel and effort were good throughout the fishery.

Non-Indian reef net fisheries targeting adipose-marked Coho salmon were conducted from the end of Fraser Panel control (September 3), until September 30, with Chum salmon retention prohibited. From October 1 through November 12, reefnets were open daily with Chum salmon

[illegible] [illegible] [illegible] [

Table 67. Preliminary MOU Clean Address Records Report For Washington County Reporting Category [ ]: %

Figure 4B: Bicycle Commuters and Types of Pedestrians Crossing, Montgomery County, 2011 – The detailed focus of the figure underscores the relative scale of pedestrian and bicycle flows in a village.

Processes Progressions and Plans | Concepts and Arrangements in Scale

The process can vary. Concepts and arrangements could be – depth, sense, local, and – everyone contributing to the – as a whole or to the – Much as the Mayor's Office of Neighborhoods or Planning – Locally, Office of Public Art Works, the – organizations, and the – Community Development Corporation, – Community – which organized the – of the village. Community – are one of the most important groups. While – are also part of the – arrangements, – groups, – as the – Community Development Corporation, – arrangements – are – groups, – and – Village – Council, as the – as a – Village.

Table 4A: Arts Villa – Area & Project Effect | Artistic Processes and Arrangements in Scale on Social Groups

	Social Groups				
	Artistic Village	Residents	Businesses	Public	Private
Processes and Arrangements					
Residences	Private	Public	Public Public	Private	Private
Arrangements					
Public	Private	Private	Public	Private	Public Public

[redacted]

[redacted]

[redacted]

U.S. Total Allowable Catch (TAC)

Pre-season, the U.S. TAC was established at 92,500 sockeye salmon. This TAC was virtually all from the Summer run management group, presenting a management challenge to limit the impact of the fisheries on the other management groups.

Preseason Management Plans

During the preseason planning process the Fraser Panel evaluates and adopts management approaches for Fraser sockeye and salmon that address conservation and harvest objectives for each major stock group. The Fraser River Panel develops fishing plans and in-season decision rules with the objective of meeting management goals. Managing Fraser River sockeye salmon involves a trade-off between catching abundant stocks and meeting escapement objectives for less abundant stock groups.

In 2012 the Panel was faced with a situation where fishing opportunities would be constrained by Early Summer runs at the beginning of the season and Late Run stocks later in the season. There was no international TAC predicted to be available for Early Stuart sockeye in 2012, and commercial fisheries were not contemplated in this timing group.

The early entry behavior of Late Run sockeye, observed in recent years, which results in an apparent high loss of fish prior to reaching the spawning grounds, was expected to continue in 2012, resulting in a proportional management adjustment of 45%.

Given the constraints around Early Summer and Late runs, the U.S. Section structured its fishery to focus its harvest when the peak of the Summer runs were migrating through U.S. waters, consistent with the Commission Guidance of February 17, 2010 (" ... the Panel, to the extent practical, shall strive to concentrate the U.S. fishery on the most abundant management group (or groups) (i.e., those that provide the largest percentage of the TAC)"). For the major U.S. fisheries this meant that sockeye openings would likely be constrained to about a week of fishing during the first week of August.

In-Season Management

In-season, the Pacific Salmon Commission staff analyze a variety of information to produce best estimates of diversion, management adjustments, run-timing, abundance, and harvest by stock group. These estimates are created using stock ID information, test fishing data, counts of escapements past Mission, harvest data and environmental information.

Run Assessment

The final in-season abundance estimates for 2012 (Table 25) indicate that the Early Stuart, Early Summer and Late run sockeye stock groups returned in numbers significantly greater than pre-season expectations (186%, 186% and 165% of forecast, respectively). However, the Summer run management group, which was the largest component of the 2012 return, was lower than the preseason forecast (82% of forecast).

Run timing was variable among management groups (Table 26), with the Early Stuart run returning 7 days later than predicted preseason, and the Late runs returning 9 days earlier than expected preseason. Early Summer and Summer runs return timing was about as expected.

Table 23. Comparison of Pre-season vs. In-season Abundance Estimates for Fraser River Sockeye Salmon by Stock Group (run).

Stock Group	Pre-Season 50% Probability Forecast	In-Season Run Size Estimate	Comparison: In-Season vs. Pre-Season Forecast
Early Stuart	90,000	185,000	206%
Early Summer	277,000	530,000	191%
Summer	1,787,000	1,300,000	82%
Late	150,000	260,000	163%
Total	2,119,000	2,275,000	107%

Table 24. 2012 Preliminary 50% Run Timing Dates in Area 20

Run Group	Pre-season 50% Run Timing Date	In-season 50% Run Timing Date
Early Stuart	June 29	July 4
Early Summers	July 16	July 16
Summers	August 1	August 2
Lates	August 11	August 5

Season Descriptions

Prior to July 23

In-season assessments of abundance indicated a significantly larger run size for the Early Stuart Run and later timing. The Early Stuart run size was updated to 160,000 sockeye. High river discharge levels resulted in an increase in the proportional management adjustment for the Early Stuart run from 1.95 to 3.79. No TAC was available on this management group.

Week ending July 28

Indications this week were that the summer runs were showing up in the test fisheries and were returning several days later than expected pre-season or lower in abundance. The Panel decided to open the Treaty Indian fishery in areas 6B, 5, and 6C from July 25 to July 28. The diversion rate was estimated to be 28%. The Early Summer run size was increased from 277,000 to 420,000 sockeye. The Panel adopted an increase in the proportional management adjustment for Early Summer runs from 0.32 to 1.12.

Week ending August 4

The run timings still looked to be about 3 days late for Summer runs. The Early Summer run size was increased from 420,000 to 510,000 sockeye. The diversion rate was now running only about 14%. The Panel adopted a decrease in the proportional management adjustment for Early Summer runs from 1.12 to .58. The Treaty Indian fishery in areas 6B/5/6C reopened on July 30 and remained open the rest of the week. The fisheries in areas 6/7/7A opened the latter part of the

week, similar to the preseason plan. Treaty Indian fisheries in areas 6/7/7A were open on August 2nd and August 4th. Non-Indian fisheries in areas 7/7A were open for one day on August 1st.

Week ending August 11:

Summer run timing still appeared to be running a few days late. The sockeye diversion rate had now climbed to 28%. Abundance for the Summer runs remained at the pre-season forecast level, but abundance appeared stronger for the other management groups. The Panel approved run size updates for Early Summer runs from 510,000 to 550,000 sockeye and for Late runs from 158,000 to 200,000 sockeye. The Panel approved a decrease in the management adjustment for Early Summer runs from 0.58 to 0.49. With these run size updates the U.S. still had enough sockeye TAC to mount additional sockeye fisheries. Treaty Indian fisheries in areas 4B/5/6C were open August 5 through August 10. Treaty Indian fisheries in areas 6/7/7A were open on August 8. Non-Indian fisheries in areas 7/7A were open, with shortened hours, for gillnet gear on August 9, for purse seine gear on August 10, and for reef net gear on August 11.

Week ending August 18:

The Panel updated the Summer run size estimate from 1,585,000 to 1,300,000 sockeye and the Late run size estimate from 200,000 to 250,000 sockeye. The diversion rate was running between 21 and 31%. The Panel also adopted a slightly higher management adjustment of 0.09 for the Summer run stock group. With the reduction in the Summer run size, and the resultant decrease in TAC, the U.S. fisheries had no remaining TAC and all fisheries remained closed.

Remainder of the season:

Only small adjustments to the run size estimates were made for the remainder of the season, and final in-season run size estimates are shown in Table 23. No additional fisheries were scheduled by the Panel. The Panel relinquished control of all U.S. fishing areas on September 2nd.

Harvest

Between July 25 and August 11 the United States caught a total of 110,700 Fraser River sockeye salmon in Panel area waters (Table 25)[1]. During this time period the Treaty Indian fisheries in Areas 4B/5/6C were open for a total of 14 days, and in Areas 6/7/7A for 3 days. The Non-Indian fishery in Areas 7/7A was open for a total of 2 days for each gear type. The Non-Indian fishery caught 32,400 Fraser sockeye salmon. The Treaty Indian fishery caught 78,300 Fraser sockeye salmon.

[1] Catch data reported by PSC staff as of 11/1/12.

Table 25. Preliminary estimates of 2012 U.S. catches of Fraser River sockeye salmon in Panel area waters.

	Treaty Indian	Non-Indian
Ceremonial and Subsistence (all areas)	5,500	0
Commercial Catch in Areas 4B/5/6C	13,700	0
Commercial Catch in Areas 6/7/7A	59,100	32,400
Total Catch	78,300	32,400
% of U.S. Catch	70.7%	29.3%

C. 2012 POST-SEASON REPORT FOR CANADIAN TREATY LIMIT FISHERIES

Introduction

The chapters in Annex IV of the Pacific Salmon Treaty outline the joint conservation and harvest sharing arrangements between Canada and the U.S. for key stocks and fisheries subject to the Treaty. On December 23, 2008, Canada and the U.S. ratified new provisions for five chapters under Annex IV of the Pacific Salmon Treaty. These new chapters came into effect on January 1, 2009. Chapter 4, which covers Fraser River sockeye and pink salmon, was set to expire on December 31, 2010. However an Order in Council, and the corresponding exchange of diplomatic notes, allowed for the extension of the chapter until December 31, 2013. All management regimes under Annex IV continue to be implemented by Fisheries and Oceans Canada (DFO) and U.S. agencies for the 2012 season.

The catches reported below provide the best information available to December 1, 2012, and may change once all catch information for 2012 has been reviewed. The catches are based on in-season estimates (hailed statistics), on-grounds counts by Fisheries and Oceans Canada management staff and independent observers, logbooks, dockside tallies, landing slips (First Nation fisheries), fish slip data (commercial troll and net), creel surveys, logbooks and observers (sport and commercial).

Annex fisheries are reported in the order of the Chapters of Annex IV. Comments begin with expectations and management objectives, followed by catch results by species, and where available and appropriate, escapements. The expectations, management objectives, catches and escapements are only for those stocks and fisheries covered by the Pacific Salmon Treaty; domestic catch allocations have been excluded. Table 54 summarizes 1995-2012 catches in Canadian fisheries that have at some time been under limits imposed by the Pacific Salmon Treaty.

Transboundary Rivers

Stikine River

Canada developed a fishing plan for Stikine River salmon fisheries based on the catch sharing and management arrangements outlined in Annex IV, Chapter 1, Paragraph 3 of the Pacific Salmon

Treaty, including the new arrangements agreed to on January 17, 2008 for the 2009 to 2018 period. Accordingly, the 2012 management plan was designed to meet agreed escapement targets and the following harvest objectives: to harvest 50% of the total allowable catch (TAC) of Stikine River sockeye salmon in existing fisheries; to allow additional harvesting opportunities in terminal areas for enhanced sockeye that were surplus to spawning requirements; to harvest up to 5,000 coho salmon in a directed coho fishery; and, to harvest approximately 1,400 large chinook salmon in a test fishery, conducted by the commercial fleet. Because the preseason run size estimate of 40,800 chinook exceeded the PST agreed upon preseason threshold run size of 28,100 large chinook, both countries were permitted to engage in a directed net fishery. The allowable catch for the US and Canada was 5,890 and 6,810 chinook salmon respectively. The allowable catch does not include a base level catch of 3,400 and 2,300 chinook salmon for the US and Canada respectively.

The 2012 season opened on May 6, 2012, statistical week 19 (SW19), and ended September 6, (SW36). In week 23 (SW20) the commercial fishery was closed. However, the commercial fleet continued to fish under the auspices of a test fishery with a catch quota of approximately 228 large chinook. This action was taken as a result of the in-season chinook run size estimate of less than 24,500 fish (threshold number used to trigger a directed chinook fishery). The commercial fishery reengaged in week 24 (SW24) as a result of an increase in the inseason run size estimate that exceeded the 24,500 fish threshold. Commercial gear consisted of one 135-metre (443 ft) gill net per licence holder. The maximum mesh size allowed was 204 mm (8") through June 24th after which time the maximum mesh size was restricted to 140 mm (5.5"). Only one gill net was permitted throughout the course of the commercial fishery.

The lower Stikine commercial fishing grounds covered the area from the international border upstream to near the confluence of the Porcupine and Stikine rivers and also included the lower 10 km (6 mi.) of the Iskut River.

In the upper Stikine commercial fishery, which is located upstream from the Chutine River, fishing periods generally mirrored those in the lower Stikine commercial fishery, but lagged by one week. Fishers were permitted one net. Effort was low throughout the season. Again in 2012, the commercial fishing area was extended upstream to the mouth of the Tuya River. This action was taken in order to provide for a terminal fishing opportunity on Tuya River bound sockeye, specifically at sites located upstream of the Tahltan River. For the fifth consecutive year no commercial fishing activity occurred at this site. The Tuya run, which consists entirely of sockeye produced from the Canada-U.S. Stikine enhancement program, has no spawning escapement requirement since these fish cannot return to Tuya Lake due to several velocity barriers located in the lower reaches of the Tuya River. Tuya sockeye are released into Tuya Lake as young of the year juveniles.

The First Nation fishery located near the community of Telegraph Creek, B.C. was active from late May to mid-August. There were no time or gear restrictions imposed on this fishery.

Most of the chinook sport fishing activity in the Stikine River watershed occurs in the lower reaches and at the mouth of the Tahltan River. Additional activity occurs less intensively in the Iskut River and other areas within the Stikine River drainage. Sport fishing activity commenced in late June and peaked in mid-July. Fishing effort and catch was relatively low.

Chinook Salmon

The pre-season forecast of Stikine chinook salmon, as provided by the Canada/U.S. Technical Committee for the Transboundary Rivers (TCTR), was for a below average terminal run size of 40,800 large chinook salmon, i.e. fish with a mid-eye to fork length >659mm (~26") or a fork length of >734mm (~29"). For comparison, the previous 10-year (2002-2011) average terminal run size was approximately 45,400 large chinook salmon.

The total combined gill net catch of chinook salmon in the First Nation and commercial fisheries included 4,573 large chinook and 1,213 jacks compared to 2002-2011 averages of 6,792 large chinook and 1,356 jacks. The 2012 sport fishery yielded a total catch of 64 large chinook.

In-season management was influenced significantly by run size projections derived from the Stikine Chinook Management Model (SCMM), a joint Canada-U.S. mark-recapture program, and other stock assessment tools such as the relationship between the commercial fishery CPUE and run size from 2005-2011. Harvest rate assessments by week were also used concurrently with the above-mentioned in-season run size estimation techniques. In-season estimates based on the average of the mark-capture and model estimates were calculated post SW23. In-season terminal run size projections ranged from 20,900 fish in SW23 to 33,600 fish in SW26. According to the in-season projections, the TAC for Canada varied from 6,600 to 2,300 large chinook. The TAC included the allowable catch based on current run size estimates and PST catch shares, the base level catch of 2,300 fish, plus 228 fish allocated under a test fishing regime. The final post season run size was 31,600 large chinook salmon.

Although a directed commercial chinook fishery was prosecuted throughout most of the season, the low in-season run size estimate of 20,900 chinook generated after three weeks of fishing resulted in the fleet converting to a test fishing regime commencing in SW23. A test fishery was required to provide stock assessment personnel with the tools to determine weekly run sizes by both test fish CPUE and the ratio of spaghetti tags recovered in the fishery (m-r project). Canada endeavoured to honour Annex IV, Chapter 1, Paragraph 3(a)(3)(vi) which identifies the will of both Parties to partition the chinook harvest (Canada's base level catch of 2,300 and 1,400 large chinook provided by a test fishery) over the season through weekly fishery openings based on weekly guideline harvests. As result the guideline test fish harvest for SW23 was only 228 large chinook. The commercial fishery was reinstated after SW23 due to the inseason run size estimate increasing to 31,100 chinook, above the 24,500 fish threshold. The SW23 test fishery guideline was exceeded by 100%; however, commercial catches were close to the established weekly guidelines. The first week of the targeted sockeye fishery, which commenced in SW26, had a mesh size restriction of 140 mm (~5.5"); this action was aimed at minimizing the catch of large chinook salmon while providing a fishing opportunity on the early component of the sockeye return.

The preliminary post-season estimate of the terminal run was 31,600 large chinook salmon, including an in river run size based on mark-recapture data of 27,900 large Chinook and a total U.S. catch estimate of 3,700 large chinook. Accounting for the total Canadian catch of 6,500 large chinook salmon (includes commercial, First Nation, sport and test catches), the total system-wide spawning escapement is estimated to be approximately 21,500 large chinook salmon. This escapement estimate is 27% below the 2002-2011 average of 27,800 large chinook and 23% above the target SMSY escapement goal of 17,400 large chinook salmon. The escapement was within the escapement goal range of 14,000 to 28,000 large chinook salmon. A run size of 31,600 large chinook translates into an Allowable Harvest in directed commercial fisheries of 7,100 large chinook, shared by Canada and the US. Both Canada and the US were also entitled to harvest

their base level of catch of 2,300 and 3,400 large chinook respectively. In addition, Canada was entitled to harvest its test fish allocation.

The 2012 chinook escapement enumerated at the Little Tahltan weir was 720 large fish and 51 jack chinook salmon. The escapement of large chinook salmon in the Little Tahltan River was 86% below the average of 4,989 fish and 78% below the MSY escapement goal for this stock of 3,300 large chinook salmon. The weir count was also well below the low end of the escapement goal range of 2,700 to 5,300 large fish, and represented only 3% of the Stikine wide escapement. This proportion of the escapement is well below the average Little Tahltan contribution of 15%. This is the sixth consecutive year that the lower end of the escapement was not reached. This year's return, however, is a product of a very weak escapement in 2007 (this year's five year old fish) when only 562 large chinook were enumerated. The failure from the 2006 escapement of 3,860 (this year's six year old fish) cannot be fully explained. The jack chinook count was 77% below the average count of 219 fish.

Escapement counts in Verrett Creek (a tributary to the Iskut River) were reliable in 2012 due to high turbid flow conditions as reported by the carcass pitch crew stationed at the creek from August 5-10. A relatively strong return of chinook salmon to Shakes Creek (near Telegraph Creek) was reported by residents living at the creek mouth. Anecdotal observation of spawners in the mainstem Tahltan River indicated a strong return. Incidental chinook catches taken in the Tuya/Stikine test fishery were the highest on record. The sampling crew in the Tuya River reported an unusually high incident catch of chinook salmon as well.

Stikine River chinook run timing to the lower Stikine commercial fishing and timing to the spawning grounds appeared to be normal.

In addition to the mark-recapture study, the Little Tahltan weir project, and aerial surveys; genetic samples were collected on a weekly basis from Chinook caught in the U.S. District 108 fishery and from weekly catches taken in the Canadian commercial fishery. This data will be used to assess run timing of Stikine stocks in District 108 and the lower Stikine commercial fishery.

Sockeye Salmon

The pre-season forecast for Stikine sockeye salmon, as provided by the TCTR, was for a terminal run size[2] of 134,000 fish including: 51,700 Tahltan Lake origin sockeye salmon (35,500 wild and 16,200 planted); 32,600 planted Tuya Lake sockeye; and 49,700 non-Tahltan wild sockeye salmon. This outlook constituted a below average run; for comparison, the previous 10-year average (2002-2011) terminal run size was approximately 203,500 fish.

Preliminary combined catches from the Canadian commercial and First Nation (food, social, ceremonial (FSC)) gill net fisheries in the Stikine River totalled 30,426 sockeye in 2012, which was below the 2002-2011 average of 59,525 fish. The lower Stikine commercial fishery harvested 25,958 sockeye, while the upper Stikine commercial and First Nation fisheries harvested a total of 468 and 4,000 sockeye, respectively. The preliminary estimate of the total contribution of sockeye salmon from the Canada/U.S. Stikine sockeye enhancement (i.e. the fry-planting program) to the combined Canadian First Nation and commercial catches was 11,900 fish, or 39% of the catch.

[2] Terminal run excludes U.S. interceptions that occur outside Districts 108 and 106.

In addition to these catches, 1,777 sockeye salmon were taken in the traditional stock assessment test fishery located near the international border. For the fifth consecutive year, a test fishery designed to target Tuya-bound sockeye operated in the mainstem Stikine River upstream of the mouth of the Tahltan River and succeeded in harvesting 2,306 sockeye salmon.

A total of 13,687 sockeye salmon was counted through the Tahltan Lake weir in 2012, 61% below the 2002-2011 average of 35,206 fish. The 2012 count was below the escapement goal range of 18,000 to 30,000 fish. An estimated 5,612 fish (41%) originated from the fry-planting program, which was above the 35% contribution observed in smolts leaving the lake in 2009, the principal smolt year contributing to the 2011 return. A total of 244 sockeye salmon was sacrificed at the weir for stock composition analysis. In addition, 3,949 sockeye salmon were collected for broodstock, resulting in a spawning escapement of 9,514 sockeye salmon in Tahltan Lake.

The total estimated run size of 33,660 Tahltan Lake sockeye was approximately 35% below the preseason expectation of 51,700 fish.

The spawning escapements for the non-Tahltan and the Tuya stock groups are calculated using stock ID, test fishery and in-river commercial catch and effort data. The average of the test fishery and the commercial fishery catch-per-unit of effort (CPUE), which operated over the full duration of the run, were used as the principal tool in assessing the spawning ground escapements of non-Tahltan Lake and the Tuya sockeye stock groupings. Based on the run reconstructions generated from the test and commercial fishery CPUE, the preliminary escapement estimates for 2012 were 33,612 non-Tahltan and 10,507 Tuya sockeye salmon. The non-Tahltan spawning escapement estimate was within the escapement goal range of 20,000 to 40,000 and was 12% above the mid-point escapement goal of 30,000 sockeye. The 2012 escapement was 5% above the recent 10 year average of 31,275 fish. No mainstem sockeye aerial surveys were conducted in 2012 due to high, turbid water conditions. The estimated escapement of 10,507 Tuya Lake sockeye was close to the recent 10 year average of 10,452 fish. These fish do not contribute to the natural production of Stikine River sockeye salmon due to migration barriers that obstruct entry to their nursery lake and potential spawning gravels.

Based on the in-river run reconstruction of the Tahltan Lake run expanded by run timing and stock ID data in the lower river and estimated harvests of Stikine sockeye in U.S. terminal gill net fisheries, the preliminary post-season estimate of the terminal sockeye run size is approximately 123,665 fish. This estimate includes 33,961 Tahltan Lake sockeye, 29,521 Tuya Lake sockeye, and 60,184 sockeye of the non-Tahltan stock aggregate. A Stikine run size of this magnitude is below the 2002-2012 average terminal run size of 199,000 sockeye salmon and is approximately 7% below the preseason forecast of 134,000 fish.

Similar to 2008-2011, Canada relied more heavily on other in-season abundance estimates than those derived from the Stikine sockeye management model (SMM), which was updated and refined by the TCTR prior to the season. The SMM was used exclusively in SW27 by Canada and was used in concert with other in-river assessment estimates from SW28 through SW33. It was felt that the model was over-estimating both the Tahltan Lake and mainstem sockeye run sizes. As a result, most of the in-season run projections used in management of the Canadian fisheries were based on the average of the SMM and run reconstruction analyses or the average of the SMM model and an in-river regression model as the season progressed. The run size projections ranged from 111,600 fish in SW34 to 166,700 fish in SW27. The final in-season run size estimate was 111,600 fish, based on the run reconstruction approach, while the final estimate based solely on the SMM was 121,600 fish. The preliminary post-season estimate was 123,665

with a Canadian allowable harvest of 23,500 fish. The actual catch was 33,300 fish, 141% above the allowable harvest.

Coho Salmon

For the fourth consecutive year, several boats remained in the fishery to harvest coho salmon resulting in a total catch of 6,188 coho salmon. A total catch of 5,748 coho salmon was taken during the targeted coho fishery from SW35-36, slightly above Canada's 5,000 pieces allocation under the PST, and well above the recent 10 year average catch of 2,034 fish.

The cumulative weekly CPUE index of 5.7 observed in the coho test fishery was 5% below the recent 10 year average cumulative CPUE of 6.0. Aerial surveys of six index spawning sites was aborted midway through the survey due to ice, snow and wind conditions.

Joint Sockeye Enhancement

Joint Canada/U.S. enhancement activities continued with approximately 5.66 million sockeye eggs collected at Tahltan Lake in the fall of 2012, meeting the target of 5.5 million. The 5.5 million egg target was agreed upon bilaterally prior to the project beginning in August 2012 due to realising lower than expected returns and associated Treaty guidance to handle such situations specific to Tahltan Lake. The ability to reach the egg take goal in 2012 was largely due to the changes in methodology and additional resources that were utilized. An additional brood stock collection crew was employed to acquire brood stock by means of angling from secondary sites where seining is not effective. Brood stock collected through both historical beach seine practices and angling were held in large net pens to ripen. Through the additional efforts in 2012, 76% of the total females spawned were from short term holding and 25% of the total females collected were collected from the secondary sites. Without the additional efforts undertaken in 2012, it is clear that the target would not have been achieved. The last day of brood stock collection occurred on September 25 as per the agreed plan and the final egg take was completed on September 28.

Approximately 2.12 million fry were out-planted into Tahltan Lake in late May and early June of 2012. The fry originated from the 2011 egg-take and were mass-marked at the Snottsham hatchery with thermally induced otolith marks. The balance of 1.59 million fry originating from the 2011 Tahltan Lake egg take was released into Teya Lake in mid June of 2012. This group also had a unique, thermally induced otolith mark. Green egg to released fry survival was 51.9% for the eggs designated for Teya Lake and 62.8% for those designated for Tahltan Lake. A total of 0.88 million fry destined for Teya Lake and 0.34 million fry destined for Tahltan Lake held at the Snottsham hatchery were destroyed due to an outbreak of Infectious Hematopoietic Necrosis Virus (IHNV). The U.S./Canada sockeye enhancement program has been subject to IHNV outbreaks in its history and while unfortunate the losses were within normal occurrence levels.

Although the Stikine enhancement program has been successful in producing significant numbers of sockeye salmon, the inability to harvest those fish in terminal areas continues to be a challenge. Returning adults from the Teya Lake out-plants unsuccessfully attempt to ascend the impassable barriers in the lower reaches of the Teya River until they either perish or back out of the system. Some of those drop outs end up in nets fished in the Telegraph Creek area raising concerns over

poor quality, injured and bottomed up fish. Others stop[1] into Sekine River tributaries raising concerns over potential impacts on wild salmon stocks.

Various attempts have been made to date to address these concerns many of which were made possible by support from the Northern Fund. Fishing with gill nets and dip nets has occurred at various sites in the Taya River with mixed results. To improve fish capture in the lower Taya River, a fishway trapping apparatus was designed and constructed in Vancouver during the spring of 2008 and transported to Whitehorse. However, full operation of the apparatus was cancelled because of a major rock slide at the Taya River fishing site that occurred sometime in June 2008. The rockslide rendered the fishing site, which the fish trap was designed for, unusable due to changes in river hydrology and unsafe working conditions. In 2007, additional rock slide activity occurred in the lower reaches of the Taya River. A steering committee, consisting of Canadian and U.S. engineers and other technical advisors, visited the site in August 2007 to re-assess the conditions and to consider other options. The committee decided to proceed the following year with plans to strategically blast the rock obstruction at the location of the 2008 rock slide to provide fish passage to a potentially favourable harvest site located approximately 800 metres (1/2 mi.) further upstream. In the late fall of 2008, a blasting crew succeeded in removing approximately 100 m3 (~130 cubic yards) of rock from the blockage. A visual and test fish assessment conducted in late July 2009 and 2010 at locations below and above the blast site indicated that the majority of the fish, including Chinook salmon, succeeded in ascending the river to points above the rock slide site. The committee plans to contract an engineering firm to design a fish harvest structure for the new site. The firm will provide both design detail and cost estimates for the structure as well as the routing and costs of an access trail to the site. The plans would then be available for consideration by all interests. The initial road survey was conducted in May 2009, followed by a detailed professional survey in August 2010. Work continues on the design and cost estimates of both an access road and a fish trap in 2012.

For the fifth consecutive year, an experimental test fishery designed to target Taya River sockeye at fishing sites located in the lower Grand Canyon of the Sekine River upstream from the mouth of the Tahltan River was conducted. The project design followed the design adopted in 2009 so that the majority of nets were fished further upstream in the Sekine River and closer to the mouth of the Taya River than what occurred in 2008. This change was prompted by the stock identification results from 2008 which indicated that less than 10% of the catch was Taya River origin sockeye in 2008. The 2012 Taya test fishery yielded a total catch of 1,309 sockeye in late July. There were also 44 Chinook caught and released. The majority of the catch was distributed to elders of the Tahltan/Iskut First Nations, most of whom were residents of communities located within the Sekine River drainage.

Tahu River

As with the Sekine River, the fishing plan developed by Canada for the Tahu River was based on the new arrangements in Annex IV, Chapter 1, Paragraph 3 of the PST in effect for 2009 through 2018. Accordingly, the plan addressed conservation requirements and contained the following

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[1] Straying of Taya sockeye has been confirmed using radio telemetry and sampling for thermal marks. In a report completed in February 2006, funded by the Northern Fund, which investigated potential impacts and risks of the straying of enhanced Taya sockeye salmon, the authors concluded that "…given the results of the literature review and the data collected to date in the Sekine River, the probability of genetic risk of Taya River Hatchery fish appears to be extremely low. However, it is prudent to suppose, that given a long enough period of time and a large enough number of fish, that some successful straying and interaction of Taya River fish/wild fish could take place."

[illegible]

[illegible] [illegible] [illegible] [

[illegible] [illegible] [illegible]. [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

approximately 5% of the females were used for brood stock. In 2012 four egg takes were conducted on September 17th and 23rd and October 1st and 9th. An estimated 2.0 million sockeye eggs were delivered from Tatsamenie Lake to the Snettisham Hatchery for incubation and thermal marking. This met the target of 2.0 million as per the agreed bilateral production plan.

Alsek River

Although catch sharing of Alsek River salmon stocks between Canada and the U.S. has not yet been specified, Annex IV of the Pacific Salmon Treaty does call for the development and implementation of cooperative abundance-based management plans and programs for Alsek River Chinook and sockeye salmon. Interim escapement goal ranges for Alsek River sockeye and coho salmon were initially set by the TTC at 32,000 to 98,000 sockeye, and 5,400 to 27,000 coho salmon. The principal escapement monitoring tool for Chinook, sockeye, and coho salmon stocks on the Alsek River is the Klukshu weir, in operation since 1976 by DFO in cooperation with the Champagne-Aishihik First Nation (CAFN).

To make the management objectives of Chinook and sockeye salmon better defined in terms of Klukshu stocks, revised goals, expressed in terms of Klukshu escapements only, were established in 1999 and used again in 2012. Mark-recapture programs to estimate the total in river abundance and the fraction of the escapement contributed by the Klukshu stocks were in operation since 1997 for Chinook salmon and since 2000 for sockeye salmon. These however were discontinued in 2009.

Previously, a joint escapement goal for Klukshu Chinook was developed by both DFO and NDFG&G, which recommended an escapement goal range of 1,100 to 2,300 Chinook spawners in the Klukshu drainage (McPherson, Etherton and Clark 1998). A review of the recent escapement goal analysis completed by Bernard and Jones in 2010 was conducted by the Canadian Science Advisory Pacific (CSAP). The CSAP review has been finalized. The 2010 analysis suggested a revised escapement goal of 800-1,200 fish. Adoption of the revised goal is pending acceptance by the TTC.

The current biologically-based escapement goal for Klukshu sockeye is 7,500 to 17,000 fish (Clark and Etherton, 2000). Similar to the Chinook goal review, an updated escapement goal analysis for sockeye was completed in 2010 by Eggers and Bernard, and was reviewed by CSAP. The CSAP review has been completed. The 2010 analysis suggested a revised escapement goal of 7,500-11,000. Adoption of the revised goal is pending acceptance by the TTC.

Total drainage abundance programs are being investigated as part of the development of abundance-based management regimes and to accurately assess whether the escapement goals for Alsek River Chinook and sockeye salmon stocks are appropriate and if so, are being achieved. At this time, there are no programs in place to estimate the drainage-wide coho salmon escapement. A large and variable proportion of the escapement of each species is enumerated at the weir on the Klukshu River. Current escapement monitoring programs including the Klukshu weir, Village Creek electronic counter, and aerial surveys allow annual comparisons of escapement indices. The most reliable long-term comparative escapement index for Alsek River drainage salmon stocks is the Klukshu River weir count.

The harvest estimate for the 2012 First Nation fishery was comprised of the fish taken from the Klukshu River weir (eggs only) and an estimate of catches above/below the weir (based on the past relationship with the weir count and harvest). It is assumed that a near zero harvest of

Chinook occurred due to the poor return to the Klukshu River. An estimated 1,734 sockeye and no coho salmon were harvested in the food fishery. The average catches are 83 Chinook, 1,451 sockeye, and 7 coho salmon. Preliminary catch estimates for the Tatshenshini recreational fishery were above average for Chinook salmon, with an estimated 85 fish retained (315 released), and near average for sockeye salmon with 52 retained (157 released), and an unknown number of coho salmon were retained (2 released). These were 28% above average for Chinook salmon and 29% above average for sockeye salmon. Due to the poor Chinook return to the Klukshu River, non-retention of Chinook salmon was implemented on July 25th in the Yukon portion of the Tatshenshini River. Retention of sockeye salmon was permitted on August 15th.

The preliminary weir count and escapement estimates of Klukshu River sockeye salmon were 17,698 (count expanded due to high water delaying weir installation until July 13th) and 17,176 fish, respectively, in 2012. The count of 5,969 early run fish (count through August 15) was nearly twice of average while the count of 11,725 late run fish was near average. The total escapement of 17,176 fish was above the upper end of the recommended escapement goal range of 7,500 to 15,000 fish. The sockeye escapement to Village Creek was 1,372 in 2012 (average is 2,632).

The most reliable comparative Chinook escapement index for the Alsek River drainage is the Klukshu River weir count. The preliminary Chinook salmon weir and escapement estimate in 2012 was 693 (count expanded due to high water delaying weir installation until July 13th). A minimal harvest above the Klukshu River weir was thought to have occurred due to the poor return so no adjustment to the weir count was made to estimate spawning escapement. The 2012 count was well below the escapement goal range of 1,100 to 2,300 Klukshu Chinook salmon.

The Klukshu River coho salmon weir count was 1,272 below the 10 year average of 2,495 fish. As in past years, the weir count cannot serve as a reliable run strength indicator as the weir is normally removed well before the end of the coho salmon run to the Klukshu River.

Northern British Columbia

Pink Salmon

In the Canadian northern boundary area, pink salmon returns were anticipated to be below average for both Area 3 and Area 4, based on brood year return strength. Actual returns to Area 3 streams were average and returns to Area 4 streams were well below average.

Areas 3-1 to 3-4 Pink Net Catch

For the year 2012, Canada was to manage the Area 3-1 to 3-4 net fishery to achieve an annual catch share of 2.49 % of the annual allowable harvest (AAH) of Alaskan Districts 101, 102 and 103 pink salmon. With a Total Return of approximately 31.10 million pinks, the Alaskan Districts 101, 102 and 103 AAH was 20.35 million pinks. The resulting Area 3-1 to 3-4 Canadian commercial net total allowable catch of this AAH was approximately 0.51 million pinks of Alaskan Districts 101, 102 and 103 origin.

The 2012 preliminary Canadian pink salmon catch in Sub-areas 3-1 to 3-4 was 118,164 and the Alaska stock component of this catch is estimated to be 96,658, or 0.47 % of the AAH, well below the annex agreement of 2.49 %.

Area 1 Pink Troll Catch

For the year 2012, Canada was to manage the Area 1 troll fishery to achieve an annual catch share of 2.57 % of the annual allowable harvest (AAH) of Alaskan Districts 101, 102 and 103 pink

salmon. The resulting Area 1 Canadian commercial troll total allowable catch of this AAH was approximately 523,056 pinks of Alaskan Districts 101, 102 and 103 origin.

The Canadian commercial troll fishery targeting pink salmon was open in the northern portion of Area 1 (Dixon Entrance AB Line) from July 1st to September 30th. Pink retention was also permitted during the chinook directed fishery in parts of Area 1 which was open from June 21st to September 30th with closed periods from July 16th to July 19th and August 12th to September 3rd. Area 1 pink salmon directed effort was very minimal and the fishery harvested a total of 57,013 pink salmon, with an estimated 52,143 being of Alaskan origin. This equates to 0.26 % of the Alaskan District 101, 102 and 103 pink AAH, well below the annex agreement of 2.57%.

Chinook Salmon AABM Fisheries

Objectives and Overview

The pre-season abundance index for North Coast B.C. troll and Haida Gwaii sport fisheries in 2012 was 1.32, which allowed a total catch of 173,600 chinook salmon in these fisheries.

Preliminary estimates indicate a total catch of 120,305 chinook salmon; 80,256 caught in commercial troll fisheries and 40,050 caught in sport fisheries. Details of opportunities for commercial and recreational fisheries are below.

Commercial

The North Coast B.C. troll fishery was opened for chinook fishing from June 21 to July 15, July 20 to August 11 and September 4 to 30. The entire 2012 Northern B.C. troll fishery was conducted under a system of individual transferable quotas. The size limit was 67 cm. Barbless hooks and revival boxes were mandatory in the troll fishery. No troll test fisheries were conducted in the North Coast of B.C. in 2012.

Recreational

Sport fishing was open with a daily limit of two (2)chinook and a possession limit of four (4) chinook. An estimated 40,050 chinook were caught in the Haida Gwaii (Queen Charlotte Islands) sport fishery. A minimum size limit of 45 cm was in effect and barbless hooks were mandatory in the sport fishery.

Chinook Salmon ISBM Fisheries

Objectives and Overview

Fisheries included in this category are commercial net fisheries throughout north and central B.C., marine sport fisheries along the mainland coast, freshwater sport, and Native fisheries in both marine and freshwater areas. Under the PST, obligations in these fisheries are for a general harvest rate reduction (estimated in aggregate across fisheries) for ocean mixed-stock fisheries and for stock-specific objectives (i.e., achieving the escapement goal) in terminal areas.

Commercial

Areas 3 – 6

North Coast commercial gill net catches totalled 791 chinook from Areas 3 to 6 (from hail catch data). Chinook catch in Areas 3 and 4 were 466 and 314 chinook respectively. No chinook were reported caught in Area 5 and only 11 were reported caught in Area 6. These preliminary estimates of gill net catches exclude chinook less than 5 pounds (graded as jacks and small red fleshed chinook) not normally included for PSC accounting. Small chinook typically make up less than 5% of commercial gill net catches. Final estimates based on sales slips are not yet available. However, hail catch data has underestimated catch compared to sales slips in the past. In addition, a total of 575 large chinook and 70 jacks were caught in the Tyee Test fishery on the Skeena River.

Central Coast

Central Coast commercial gill net catches totalled 3,613 chinook from Area 8 (from hail catch data).

Johnstone Strait

Johnstone Strait commercial fisheries including Area B seine and Area D gill net was managed by South Coast and corresponding catches are reported in the South Coast section of this report.

Recreational

Tidal sport catch from lodges operating in the Rivers Inlet, Hakai Pass and Bella Bella areas were estimated using log books. Approximately 3,730 chinook were retained at lodges in these areas in 2012. Chinook catch by non-lodge (independent) anglers was estimated to be 2,046 for these areas combined. Independent angler catch was estimated using on-water interview data collected by the Central Coast Conservation and Protection branch of DFO.

Preliminary estimates for tidal sport catches near the mainland coast of Northern B.C. were 7,011 from a creel survey conducted in Areas 3 and 4 in 2012. The 2012 catches in the mainland sport fishery in Areas 5 and 6 were unknown. The preliminary estimate from a freshwater creel survey conducted in the Skeena River below Terrace in 2012 was 421 chinook. Tidal and freshwater catches in Northern B.C. were significantly lower in 2012 than 2011.

First Nations

Chinook catch by First Nations on the Skeena in 2012 appear to be less than catch estimates from 2011. Catches by First Nations in the North Coast exceeded 8,189 chinook in 2012. Nisga'a and Gitanyow catches from the Nass River were 3,658 chinook. Haida catches on Haida Gwaii were estimated to exceed 1,800 chinook. Only a portion of catches from Native fisheries in the Skeena have been reported but current estimates exceed 2,731 chinook.

Catches by First Nations in the tidal portion of the Central Coast were reported as 165 chinook (catch reporting data incomplete), while the non-tidal catch of terminal Atnarko River chinook was 1,558 chinook (jacks excluded).

Overview of Northern B.C. Chinook Stock Status

Since assessments of the ISBM fisheries are relative to the escapements achieved in the chinook indicator stocks, a brief overview of the 2012 returns is provided. Northern B.C. terminal runs were less than 2011 in the Nass and Skeena Rivers. Preliminary estimates of Nass River escapements decreased to 8,309. Skeena River chinook escapements also decreased with an estimate of approximately 34,024. Atnarko River chinook escapements were estimated at 5,800, less than the 2011 return.

Fraser River Sockeye

Objectives and Overview

The 2012 Fraser sockeye forecast had an 80% prediction interval of 743k – 6.6M. From this distribution of run size forecasts, the Fraser River Panel (FRP) adopted the 50% probability level of abundance forecast for pre-season planning purposes of 2.1 million Fraser sockeye. A majority of the total return (~67%) was expected to be Summer-run sockeye, and secondarily Early Summer-run sockeye (~17%). Pre-season planning focused the Food, Social and Ceremonial fisheries on Summer-run sockeye, with constraints on harvest opportunities to minimize impacts on less abundant stock groups at the p50 pre-season run size forecasts. If the larger p75 run size forecast materialized in-season; harvest levels beyond First Nations Food, Social, and Ceremonial (FSC) fisheries could potentially occur, but would be limited.

Pre-season planning incorporated provisions to meet escapement objectives and meet conservation objectives for stocks of concern while considering international and domestic objectives. Significant effort was placed on developing a pre-season plan for anticipated fisheries. The pre-season plan included the following assumptions and guiding principles in no particular order:

The Commission's guidance provided in 2011 (direction to the FRP with respect to implementing Paragraphs 3 and 8 of Chapter 4, Annex IV of the Pacific Salmon Treaty) remained in effect for 2012;

The U.S. share of the annual Fraser River sockeye salmon total allowable catch (TAC), harvested in the waters of Washington State was set at 16.5% of the aggregate. To the extent practicable, the Fraser River Panel shall manage the United States fishery to implement a fishing plan that concentrates harvest on the most abundant management group (or groups). It is understood that the U.S. harvest may exceed 16.5% of the TAC for one or more of the less abundant management groups despite concentrating the harvest in this manner;

For computing TAC by stock management groupings, the Aboriginal Fishery Exemption (AFE) of 400,000 Fraser River sockeye, shall be allocated to management groups as follows: The Early Stuart sockeye exemption shall be up to 20% of the Fraser River AFE, and the remaining balance of the latter exemption shall be based on the average proportional distribution of First Nations Food, Social and Ceremonial catch for the most recent three cycles and modified annually as required to address concerns for Fraser River sockeye stocks and other species and as otherwise agreed by the Fraser River Panel;

The Early Summer-run management adjustment would be a weighted average using a zero proportional Management Adjustment (pMA) for Pitt River, 0.26 for Chilliwack River, and a modelled pMA for the remaining stocks based on in river migration conditions.

Late-run sockeye have historically delayed in the Strait of Georgia for 3-6 weeks prior to entering the Fraser River. Beginning in 1996, this behaviour changed to one where there is a shorter delay or occasionally immediate river entry. Concerns for Late-run early entry and the associated elevated rates of en-route and pre-spawn mortality continue. The pre-season management adjustment (MA) for Late-run sockeye was the weighted average of the observed median for Birkenhead sockeye and a timing based MA for all other Lates excluding Birkenhead sockeye.

Although the capability to assess in-season run size and marine migration timing would be good for Late-run sockeye, an in-season run size estimate for Cultus Lake sockeye would not be possible due to low abundance relative to co-migrating sockeye stocks. As a result the Cultus exploitation rate is assumed to be the same as the exploitation rate from the similarly timed Late run stocks (excluding Birkenhead) caught seaward of the confluence of the Fraser and the Vedder rivers;

Cultus Lake sockeye will be managed within the constraints of the exploitation rate identified for the Late-run aggregate. The maximum allowable exploitation rate for Cultus Lake Sockeye will be the greater of a) the exploitation rate floor identified for Late-run sockeye (currently set at 20%-30% dependant on the run size), or b) the exploitation rate that is consistent with continued rebuilding of the population based on in-season information on returns and potential numbers of effective spawners. The exploitation rate on Cultus Lake sockeye is intended to allow for fisheries on more abundant co-migrating stocks;

The four stock aggregates identified under the Pacific Salmon Treaty Annex generally contain stocks with similar timing in the marine area. Recent trends in timing of some stocks, including Raft River and North Thompson (in the Early Summer-run prior to 2012), and Harrison River (in the Late-run prior to 2012) sockeye now differs substantially from the other stocks in their recent run timing groups. In 2012 the Department managed these stocks as part of the Summer-run aggregate to better align these stocks with other stocks of similar run timing. Escapement plans, management adjustments and harvest rules have been adjusted to account for this change;

Canada's escapement plan specified escapement requirements that varied with run size for the all run timing aggregates;

At low abundances, fixed exploitation rate floors are implemented to protect 90% of the run timing aggregate (10% floor) while allowing for fisheries on more abundant co-migrating run timing groups and/or species. The exception is the Late-run aggregate where a 20% exploitation rate floor has been implemented consistent with recent years' practice. New for 2012 was that if the return of Late-run sockeye was at or above the p75 forecast consideration would be given to increasing the Late-run exploitation rate floor up to 30%;

For Early Stuart sockeye, window closures and other fishing restrictions were planned for commercial, recreational and First Nations fisheries to protect a significant proportion (90%) of the Early Stuart return. These measures included a rolling three week window closure based on run timing of the Early Stuart sockeye migration through various fishery areas; and

Conservation concerns for other sockeye stocks and species continued to impact the planning of sockeye fisheries in 2012. The stocks and species of concern in 2012 were: Early Stuart sockeye, Cultus Lake sockeye, Nimpkish sockeye, Sakinaw Lake sockeye, Interior Fraser River coho and Interior Fraser River steelhead.

Pre-Season Assessment

In addition to Canada's escapement plan, estimates of run size, diversion rate, run timing and assumptions about in-season environmental conditions are key inputs required to seed the pre-season Harvest Planning Model prior to observing in-season information. The main objective of the model is to identify potential fishing opportunities while attempting to meet conservation, international and domestic harvest objectives.

Run Size Forecasts Used For Planning

Forecast uncertainty for sockeye has increased in recent years due to generally low but variable marine survival estimates (smolt-to-adult) relative to the average. In 2009, the final in-season return estimate fell below the 10p forecast and in 2010 the final in-season return was above the 90p forecast.

The 2012 sockeye run-size forecasts were calculated using a new method, which assesses the performance of both long-term stock-recruit models which assume average productivity and non-parametric models based on recent recruit per spawner data over the entire time series via jack knife analysis. This differs from the 2011 forecast, where two forecasts were produced, based on two different assumptions about productivity. The final forecast model for each stock was selected based on its ability to predict the stock's true returns over the full stock-recruitment time series.

As outlined in the Pacific Salmon Treaty, the mid-point of the forecast provided by Canada was used for management purposes, until in-season updates of run size are available. For pre-season planning purposes, the FRP used the 50% probability level for all run timing groups and stocks. The 2012 50% probability forecasts for all four management aggregates were as follows: Early Stuart 99,000; Early Summer-run 277,000; Summer-run 1,585,000; and Late-run 158,000, for a total of 2,119,000 Fraser sockeye. The total four year old proportion of the 2012 forecast (~75% of the total four plus five year old forecast at the 50% probability level) is below average (82%) due mostly to low brood year returns for many stocks.

Diversion Rate

The pre-season forecasts of the percentage of Fraser sockeye migrating through the Johnstone Strait are based on the Northern Diversion Rate values for the aggregate stocks (time series provided by the Pacific Salmon Commission) regressed against time series for three physical variables. The final pre-season forecast of the proportion of Fraser sockeye diverting through Johnstone Strait was 43%.

For the purposes of pre-season planning, it is assumed that Northern Diversion increases over the course of the season. In addition, beginning in 2012, Harrison sockeye are assumed to migrate predominately through the Juan de Fuca approach, regardless of migration timing.

Timing Forecasts

The pre-season forecasts are based on the 50% marine arrival times for the two sockeye salmon stocks (Early Stuart and Chilko River time series provided by the Pacific Salmon Commission) regressed against time series for five physical variables. The DFO forecast of the 50% date (peak timing) for Early Stuart and Chilko Lake sockeye arriving to New Westminster was July 4 and August 9, respectively.

The FRP considered expected run timings for the other stock groups, and recommended Chilko sockeye timing, based on their historic relationship to Early Stuart sockeye timing. The following are the pre-season estimates of timing in Area 20 adopted by the FRP.

Table 27 Timing Estimates Used for Pre-Season Planning in Area 20

Stock	2012 Area 20 Timing
Early Stuart	June 29
Early Summers	July 16
Summer-run	August 1
Late-run	August 11

The following figure graphically illustrates the relative run size forecasts and run timing overlaps expected in 2012.

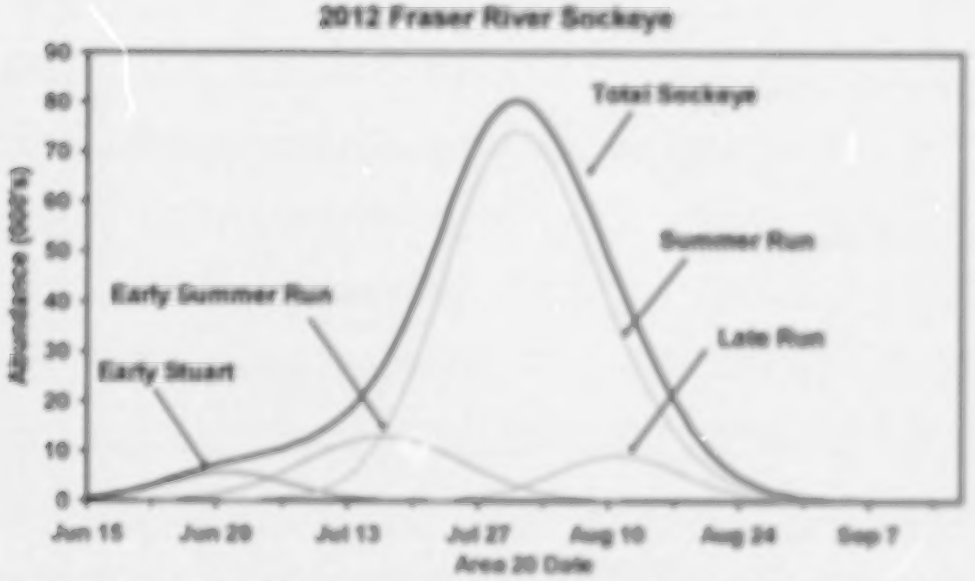


Figure 39. Relative Run Size Forecasts and Run Timing Overlaps Expected in 2012

Environmental Conditions and Management Adjustments

Management Adjustments reflect a quantity of fish that are added to the spawning escapement targets for the purpose of increasing the likelihood of achieving the spawning escapement targets. The general concept is that more fish are needed to be counted going past Mission, than needed for spawning ground escapement and the anticipated catch above Mission, to account for the historic discrepancy between the number of fish estimated at Mission in-season (minus the actual catch above Mission) and the number of fish counted on the spawning grounds. This discrepancy may be due to a number of factors, including (but not limited to): critically high temperatures and/or discharge in the Fraser River, bias in estimates at Mission hydroacoustics and/or spawning

ground escapement estimates, bycatch estimates, unreported catch, delayed mortality associated with escapes or releases from fishing gear, natural mortality, and/or predation. While all of these factors are included in the difference between estimates, the inputs used to estimate MAs are temperature and discharge for Early Stuart, Early Summer and Summer-run sockeye and the 50% migration timing at Mission for Late-run sockeye.

For the Early Stuart, Early Summer-run and Summer-run sockeye, MA estimates can be updated in-season for management purposes as river conditions and peak timing information is acquired. Late-run sockeye MA estimates can be updated in-season based on peak timing estimates.

In 2012, deviations from directly modelled estimates of pMA were made for Early Summers and Lates. The Early Summer-run management adjustment was the weighted average using zero pMA for Pitt River, 0.26 for Chilliwack River, and a modelled pMA for the remaining stocks based on in river migration conditions. The Late run pMA was the weighted average of the observed median for Birkenhead sockeye and a timing based MA for all other Lates excluding Birkenhead sockeye. The Late run methodology described was also applied in 2011.

The pre-season MA expressed as a percentage of the spawning escapement goal (pMA) and the number of sockeye this represents for 2012 pre-season run sizes are outlined below.

Table 28. MA Estimates used for Pre-Season Planning in 2012

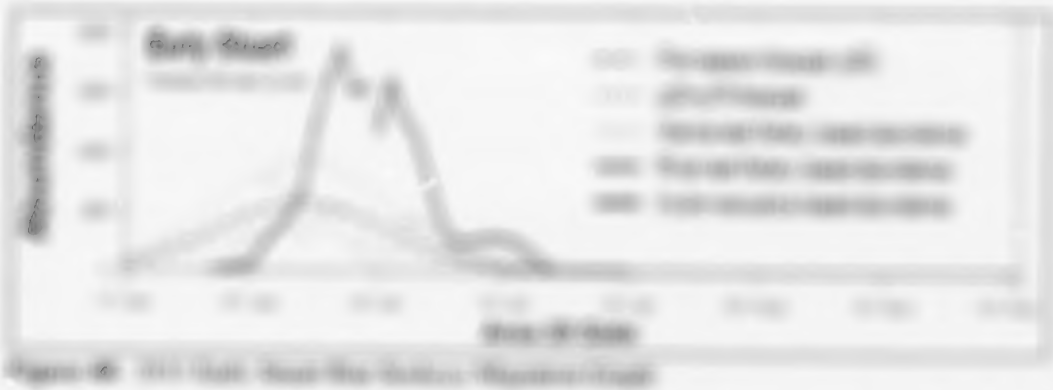
	Pre-season Run Size	pMA	MA
Early Stuarts	99,000	1.04	103,000
Early Summers	237,000	0.32	83,000
Summers	1,583,000	0.06	94,000
Late-run	158,000	0.97	153,000

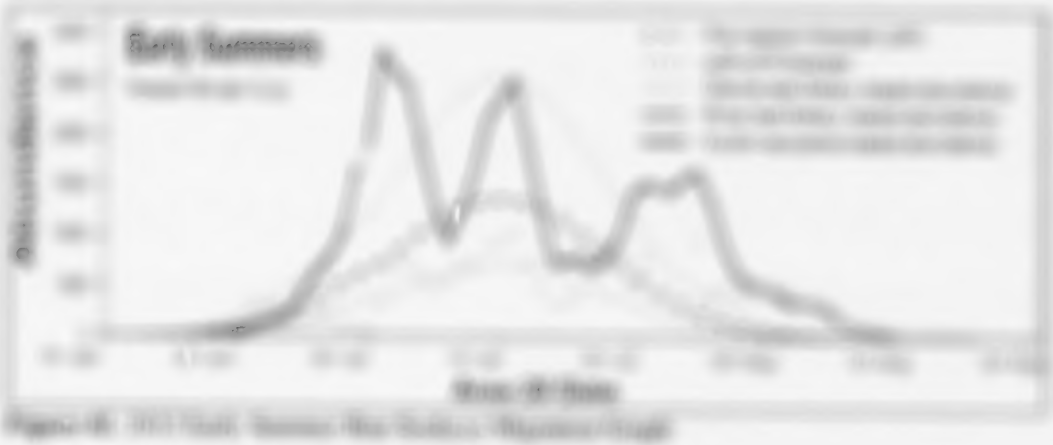
2012 Escapement Plan

The Fraser River Sockeye Spawning Initiative has been a multi-year collaborative planning process to develop a long-term escapement strategy. The annual escapement strategy seeks a balance between long-term objectives and short-term practical considerations, and combines technical analyses with qualitative judgment. A plan is developed every year and is vetted through consultative processes prior to the fishing season. The annual allowable exploitation rate for each run timing aggregate is adjusted based on run size and environmental conditions. The table below was the pre-season escapement plan for 2012 as reflected in the final Salmon Integrated Fisheries Management Plan (IFMP). Note that the Management Adjustments in the Table below have been modified subsequent to the release of the IFMP by the Panel based on adjustments to pre-season timing expectations.

[illegible]

[redacted]





Early Summer

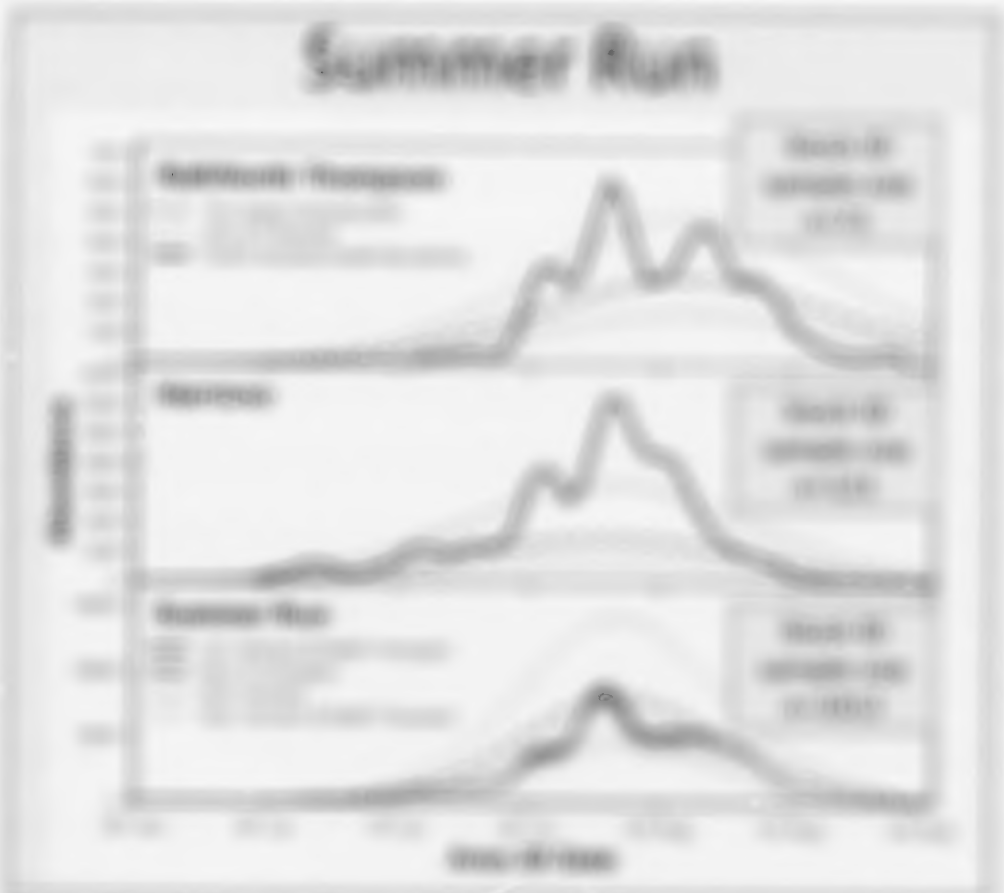


Figure 3E. [illegible] Summer Run.

[illegible]

[illegible]

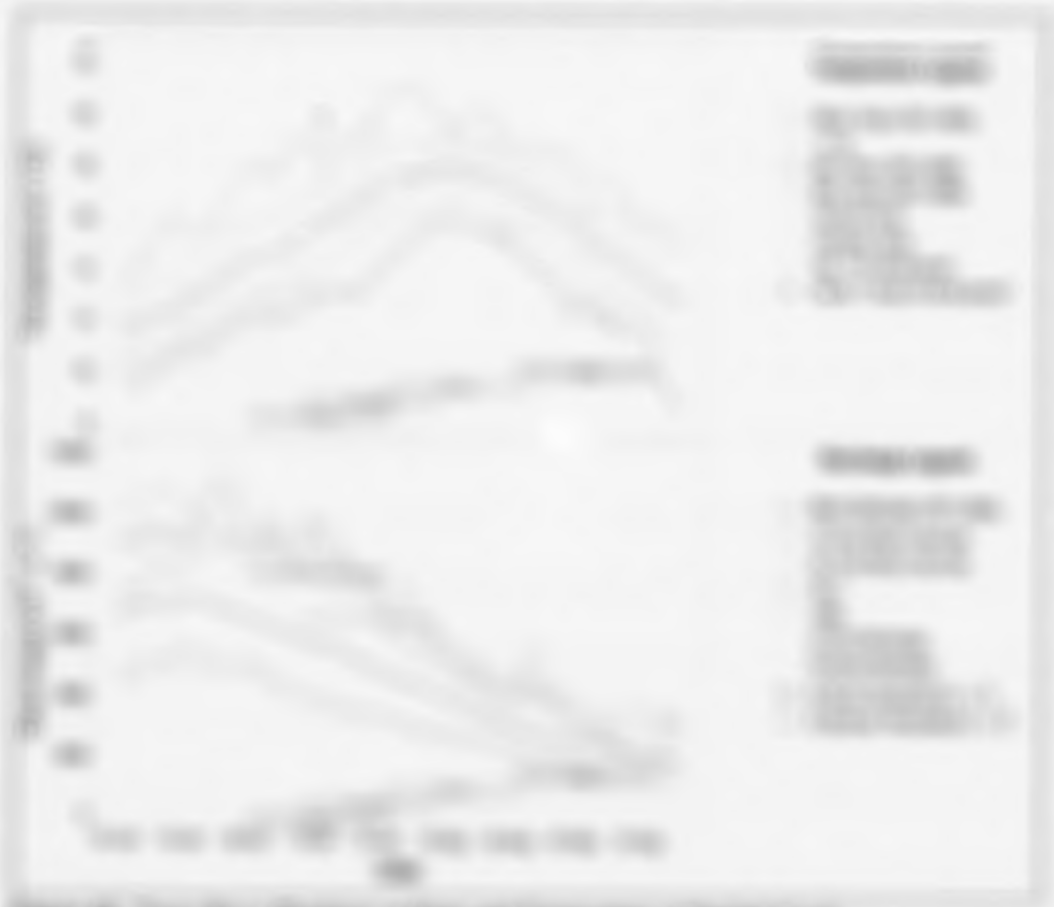


Figure 6.8 Trend Plot 2 (Showing Lifting Load Versus Lifting Speed)

Management of laboratory results can accompanied a problem and to bring to report. The to be Lab Analysis, it is difficult to Use the Table Which can Lab Analysis Office accurate specifically Testing or results validate.

Table 6.8 Processing and Use among Management Information

Method	Characteristic	Use Purpose Level	Use	Characteristic	Use Level	Purpose Use
Total Report	Include	Low	Low Level	Increase	Level	Low Level
Use	Use Level	Low	Low Level	Increase	Low	Low Level
Increase	Low Level	Low	Low Level	Low Level	Low	Increase
Increase	Low Level	Low	Low Level	Low Level	Low	Increase
Low Use	Increase	Low	Low Use	Increase	Low	Low Use

Run Size

As the season progressed the FRP considered technical advice provided by the Pacific Salmon Commission and Fraser River Panel Technical Committee members and bilaterally adopted run size changes that reflected in-season assessment information. The following table highlights a timeline of run size changes that were adopted by the FRP.

Table 32. Timeline of Run Size Changes Adopted by FRP in 2012

Pre-season	Jun 10	Jun 17	Jun 20	Jun 24	Jun 27	Jun 29	Jul 01	Aug 02
Early Stuart 90,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Early Summer 277,000	277,000	277,000	277,000	322,000	322,000	322,000	322,000	322,000
Summer 1,295,000	1,295,000	1,295,000	1,295,000	1,295,000	1,295,000	1,295,000	1,295,000	1,295,000
Late 150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000

Pre-season	Aug 06	Aug 07	Aug 15	Aug 16	Aug 17	Aug 21	Aug 23
Early Stuart 90,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Early Summer 277,000	322,000	322,000	322,000	322,000	322,000	322,000	322,000
Summer 1,295,000	1,295,000	1,295,000	1,295,000	1,295,000	1,295,000	1,295,000	1,295,000
Late 150,000	150,000	150,000	150,000	200,000	200,000	200,000	200,000

Note: Bold values indicate a change. Bold values in italics indicate a run size decrease.

The final in-season run size estimates were higher than the pre-season p50 forecasts for the Early Stuart, Early Summer and Late-run management aggregates and slightly lower for the Summer-run (see the Table below). Although in-season run size estimates for most of the stock groups were higher than forecasts adopted by the FRP the lower return of the Summer-run and the higher p90 to relative to pre-season expectations limited harvest opportunities.

Table 33. Pre-Season Forecasts vs. Final In-Season Run Size Estimates

Stock	Pre-Season Forecast			Final In-Season Estimate (Aug 28)
	10% Probability	50% Probability	75% Probability	
Early Stuart	161,000	99,000	161,000	197,000
Early Summer	349,000	277,000	322,000	330,000
Summer	2,917,000	1,949,000	2,776,000	1,300,000
Late	361,000	178,000	316,000	200,000
Total	3,210,000	2,119,000	3,765,000	2,277,000

Diversion Rate

The diversion rate of sockeye through Johnstone Strait was lower than forecast and was estimated to be ~23% (versus the 45% forecast). The figure below describes diversion rate estimates by gear type in 2012.

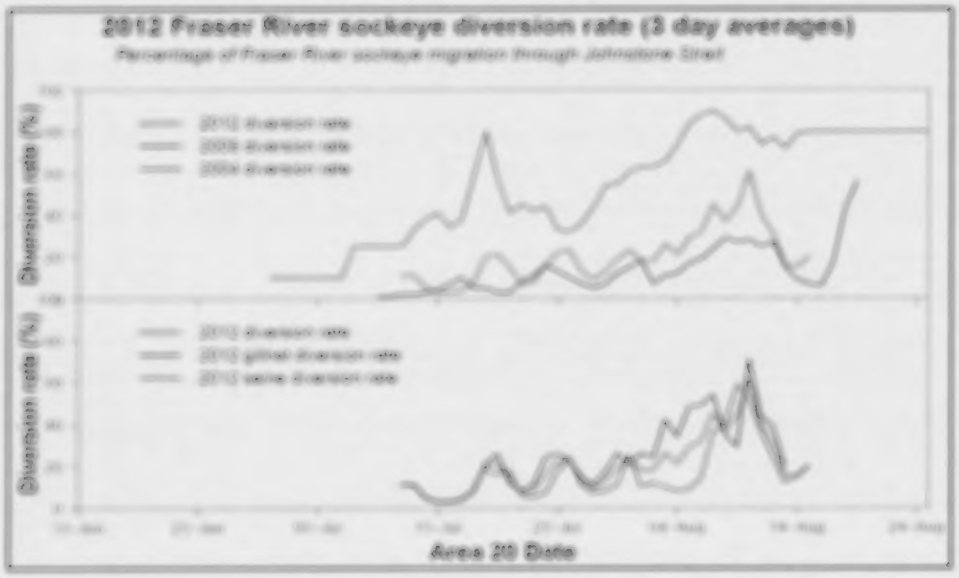

2012 Fraser River sockeye diversion rate (3 day averages)
Percentage of Fraser River sockeye migration through Johnstone Strait
Diversion rate (%)
Diversion rate (%)
Area 20 Date

Figure 44. Recent Diversion Estimates for the 2012 Cycle and 2012 Diversion Rate Estimates by Gear Type.

Fisheries

There were directed harvest opportunities for Fraser sockeye in First Nations FSC fisheries. There were no directed commercial, or recreational fisheries in Canada in 2012.

Initially, Fraser River sockeye harvest opportunities were restricted for all harvest groups based on the requirement for a three week moving window closure to protect Early Stuart sockeye when in-season assessments indicated there was no TAC for this group. The moving window closure was lifted in both the marine and Fraser River areas as planned pre-season. As the season progressed in-season information indicated that the Summer-run run size was not large enough for the FRP to consider directed commercial and recreational harvest opportunities in Canada.

The Table 34 below outlines final in-season estimates of Fraser River sockeye catch in Canada and the U.S..

Table 34. Final In-season Estimates of Fraser River Sockeye Catch in Canada & in the U.S.

Total Fraser Sockeye Caught a	625,500
Test fisheries (incl. Albion and Qualark)b	36,000
Canadian Catch	478,900
Canadian First Nation FSC fisheries- Marine	44,100
Canadian First Nation FSC fisheries- Fraserc	434,800
Canadian commercial fisheries (includes commercial selective & FN economic)	0
Canadian recreational fisheriesd	0
United States Catch	110,600
U.S. non-Treaty Indian fisheries	32,200
U.S. Treaty Indian fisheries	72,900
U.S. Treaty Indian ceremonial fisheries	5,500

a Catch rounded to the nearest 100 fish as of Oct 9, 2012.
b Includes Fraser sockeye catch in Panel approved Test Fisheries in U.S. waters
c Includes 7,200 sockeye caught by Marine area First Nations in the Fraser River
d Approximately 300 sockeye of unknown origin were estimated to be caught in marine area recreational fisheries (see Table 55). DNA samples from the catch to determine Fraser composition is currently not available.

Total Allowable Catch

The TAC for Fraser sockeye is calculated using: run size estimates, the escapement plan, management adjustment, run timing, and estimates of test fishing catches. In-season, fisheries are planned using in-season information and are not conducted based on pre-season forecasts.

In 2012, fisheries were planned in Canada targeting the stock aggregates with available TAC. Other stock aggregates that could constrain fisheries were harvested incidentally to levels identified in Canada's Escapement Plan. The following table shows the pre-season and final in-season international TAC and catch by aggregate.

Table 35. Final In-season Estimates of Fraser River Sockeye Catch as of Oct 9, 2012 in Canada and the U.S.

Stock	Pre-season total TAC*	Final In-season total TAC*	Final In-season Catch**
Early Stuart	0	0	9,100
Early Summer	52,600	205,800	78,000
Summer-run	871,200	570,200	490,300
Lates	0	0	48,100
Total	923,800	776,000	625,500

*TAC in this table includes the Canadian Aboriginal Fisheries Exemption amount of 400,000 fish.
** Values are rounded to the nearest 100 fish

The Table below outlines the final in-season TAC and catch for each country.

Table 36. Final In-Season TAC and Final In-season Catch as of October 9, 2012.[a]

Stock	Early Stuart	Early Summer	Summer	Late	Total
Test Fisheries[b]	1,800	8,300	20,000	3,700	33,800
U.S. Catch					
Commercial	0	8,200	84,900	12,000	105,100
C&S	0	400	4,400	700	5,500
U.S. Total	0	8,600	89,300	12,700	110,600
U.S. TAC [c]	0	18,300	49,300	0	67,600
CDN Catch					
Commercial	0	0	0	0	0
Recreational	0	0	0	0	0
FSC	7,200	60,800	379,300	31,600	478,900
Other [d]	100	300	1,700	200	2,200
CDN Total	7,300	61,200	381,200	31,800	481,100
CDN TAC	10,000	187,500	520,900	23,600	742,000

a Catch rounded to nearest 100 fish
b Includes Fraser sockeye catch in Panel approved Test Fisheries inU.S.waters
c16.5% TAC
d Other catch is sockeye captured in multi-species non-Panel approved test fisheries (Albion and Qualark)

Fraser Sockeye Exploitation Rates

The Table below outlines pre-season exploitation rate expectations based on the p50 forecast, pre-season MAs, 2012 Total Allowable Mortality (TAM) rules, and final in-season exploitation rate estimates based on final in-season estimates of run size and catch.

Table 37. Potential Exploitation Rates

	Pre-season *	Final In-season (Oct 9, 2012)
Early Stuart	10%	5%
Early Summer	21%	15%
Summer	56%	38%
Late	20%	19%
Cultus **	20%	19%

* ER is based on 2012 TAM rules, pre-season pMAs and the p50 forecast
** ER is assumed to be the same as similarly timed Late-run stocks (excluding Birkenhead) stocks

Post-Season

Sockeye Migration and Escapement Estimates

Early Stuart sockeye experienced difficult migratory conditions in the Fraser River in 2012 due to an above average snowpack in the watershed combined with a cool, wet spring. Discharge levels in the lower Fraser River were approximately 50% higher than average during the Early Stuart migration period, exceeding levels historically associated with poor migratory success. Estimates of spawning success were highly variable throughout the watershed in 2012.

The 2012 preliminary escapement estimate of 26,224 Early Stuart sockeye is 88% of the brood year (29,916) and 46% of the recent (1992-2008) cycle average of 56,799. Spawning success for Early Stuart sockeye in 2012 is an estimated 75.6% (24.4% pre-spawn mortality), which is well below the long term average of 89.1%.

The 2012 preliminary escapement estimate of 268,860 Early Summer sockeye is 31% higher than the brood year (174,632) and slightly above the recent (1992-2008) cycle average of 245,996. This is the third largest Early Summer-run sockeye spawning escapement on record for this cycle. The estimated spawning success for the Early Summer-run aggregate in 2012 is 89.0%, which is equal to the long term average.

The Table below outlines projected escapement information relative to the escapement goals at the final in-season run sizes. Spawning ground estimates for Summer-run and Late-run sockeye are currently not available.

Table 38. Preliminary Escapement Information to Date

Management Group	Escapement Goal @ final in-season run size	Predicted Escapement *	Preliminary Spawning Esc.
Early Stuart	74,000	42,000	26,224
Early Summer	212,000	303,200	268,680
Summer	651,000	742,600	N/A**
Late-run	260,000	107,500	N/A**
Total	***1,197,000***	***1,195,300***	

* Based on final in-season catch estimates and predicted differences between estimates

** Estimates not yet available

Post-season Catch Estimates

The current estimates of catch in this report are final in-season estimates as of October 9, 2012. Post season estimates will be available in early January. Preliminary post season estimates of catch by stock group will be available by January 14, 2012.

Fraser River Pink

Pink salmon return to the Fraser River in significant numbers on odd years only; therefore, in 2012 there was a negligible number of pink salmon that returned to the Fraser River.

Southern B.C. AABM Chinook

Objectives and Overview

Chinook fisheries are managed by either an aggregate abundance-based management or individual stock-based management regime. Allowable harvest impacts in AABM areas are determined by provisions in the Pacific Salmon Treaty and subject to domestic considerations, such as conservation and allocation. In Southern B.C., all AABM chinook fisheries are located off the West Coast Vancouver Island (WCVI), including components of the recreational fishery, First Nations fisheries, and the WCVI Area G troll fishery.

For the period October 2011 through September 2012, the forecast chinook abundance index was 0.89 of the PST base period. Therefore, under treaty provisions, the maximum allowable catch was 133,300 chinook for WCVI AABM fisheries; which includes a 30% reduction consistent with the new treaty provisions that came into effect in January 2009.

Of this total, 69,248 was the pre-season expected catch for the offshore recreational and First Nations fisheries. The remaining 64,052 chinook were allocated to the commercial fisheries (Area G and T'aaq-wiihak).

Further considerations for managing chinook catch in WCVI AABM fisheries are driven by concerns regarding the low status of natural WCVI, Lower Strait of Georgia (LGS), and Spring 42/52 and summer 52 Fraser River chinook and Interior Fraser coho populations.

Several ocean fisheries in Canada intercept WCVI origin chinook, including Northern troll, Queen Charlotte Islands (Haida Gwaii) sport, WCVI troll and WCVI sport. Ocean fisheries are limited to a 10% exploitation rate, even if PST provisions allow for a higher catch. Management measures are in place to reduce the impact of fisheries on WCVI origin chinook while still providing harvest opportunities.

Continued efforts were made in 2012 to limit the impact of the troll fishery on low status chinook populations, including time and area constraints and limits on effort (boat-days) to protect all stocks of concern.

AABM chinook catch and release information from all fisheries can be found in Table 57.

Table 39. Pre-Season and Post-Season Total Allowable and Preliminary Catch Estimates for October 2011-September 2012 WCVI AABM Chinook

	Pre-Season	Post-Season
WCVI AABM Abundance Index	0.89	under review
WCVI AABM Chinook TAC	133,300	under review
AABM Recreational Catch	60,000	62,573
First Nations Catch	5,000	4,300**
Maa-nulth First Nations Catch	4,248	2,024
T'aaq-wiihak Catch	7,654	6,292
Area G Troll Catch	56,398*	55,530
Total AABM Catch		130,719

*The total Area G troll TAC is calculated as the difference between the WCVI AABM chinook TAC less offshore recreational catch and First Nations FSC catch.
**First Nations catch is under review.

Recreational

Fishing regulations in WCVI recreational AABM areas include mandatory use of barbless hooks to lower post-release mortality on sub-legal size chinook (less than 45 cm), and a daily limit of two (2) chinook. Additional conservation measures include a 77 cm maximum size limit, imposed in those portions of Areas 123-127 that lie shoreward of a line drawn 1-mile seaward of the surfline. This area is commonly referred to as the 'Chinook Corridor', and is in place to protect migrating WCVI origin chinook. In areas along the WCVI, where hatchery origin chinook are considered to be a high portion of the recreational catch, harvesters are permitted to retain two (2) chinook per day of which one (1) can be larger than 77 cm.

Catch in the WCVI recreational fishery is estimated through a creel survey, which collects effort (number of boat trips), and catch per unit effort data. Catch for any given species within a defined time-area stratum is estimated by multiplying effort by CPUE. Total effort is estimated through vessel counts, gathered through either aerial or on-water boat surveys of the fishing area. CPUE is estimated from interviews with anglers at specific landing sites and from trip logbooks and manifests submitted by lodges and guides through a voluntary monitoring program. Data regarding the daily activity profile of the fishery, fishing locations, and the proportion of guided versus un-guided effort are also gathered from angler interviews.

Total recreational catch and release in the 2012 WCVI AABM fishery was estimated to be 62,573 and 51,027 chinook, respectively, during the survey period (June-Sept). Previous sampling has indicated that there is minimal recreational effort outside of this period and catch is expected to be low.

Effort in the AABM area for 2012 was 33,375 boat trips.

Figure 45. Preliminary Recreational WCVI Chinook AABM Catch and Effort, 1995-2012

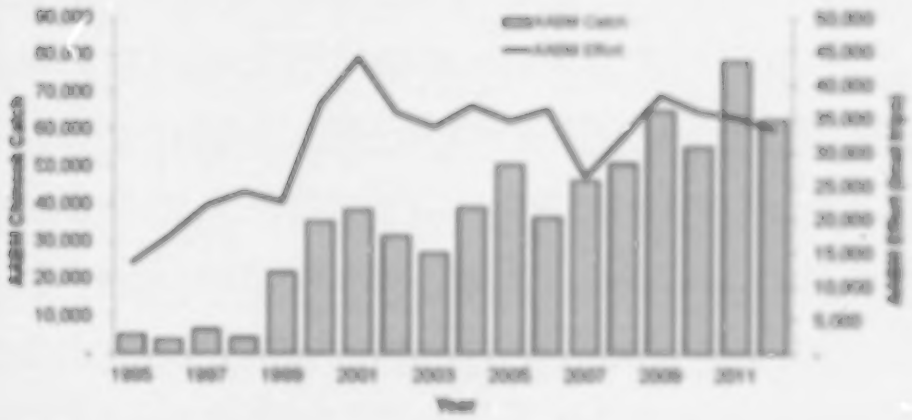


Table 40. Preliminary Estimates of WCVI Recreational AABM Effort, Chinook Catch, and Chinook Releases by PFMA, 2012

2012	Area	AABM Effort (Boat Trips)	AABM Chinook Catch	AABM Chinook Releases
Inshore	Juan de Fuca (20W)	-	-	-
Inshore	Area 21	101	18	-
	Nitinat (22)			
	Alberni Inlet (23)	6,126	42	4
	Barkley Sound (23)	4,591	7,391	4,697
	Clayoquot (24)	533	915	438
	Nootka (25)	48	180	-
	Kyuquot (26)	42	75	128
	Quatsino (27)	304	235	185
Offshore	Area 121	2,480	10,222	2,726
	Area 123	6,366	16,018	15,535
	Area 124	4,070	8,909	10,513
	Area 125	3,819	6,231	4,277
	Area 126	1,946	6,562	9,986
	Area 127	2,929	5,755	2,527
	WCVI	**33,375**	**62,573**	**51,027**

First Nations

The 2012 WCVI First Nations AABM chinook reported catch is still under review at this time but is estimated at 4,300 based on observed catches from previous years. Catch from Maa-nulth Nations domestic fisheries for AABM chinook was estimated at 2,024.

Commercial

After the completion of the April 2012 Chinook Technical Committee (CTC) chinook model calibration, the WCVI AABM Canadian allowable harvest was 133,300. The PSC harvest was set at 9,248 and the recreational expected catch was 60,000, leaving 64,052 available for commercial harvest. The commercial TAC was apportioned with 88.05% to Area G Troll and 11.95% to the T'aaq wiihak First Nations Demonstration fishery. The Area G Troll TAC was 56,398 chinook. The total estimated Area G troll catch was 55,330 chinook. The T'aaq wiihak First Nations TAC was 7,654 chinook. The total estimated T'aaq wiihak First Nations catch was 6,292 chinook.

For the 2011/2012 chinook year, fisheries continued to be shaped by conservation concerns for the following domestic stocks: Spring 4/5; and summer 5; Fraser River chinook, Interior Fraser River coho, WCVI origin chinook salmon, and LGS chinook.

Area G Troll Summary

The Area G Troll annual management plan is designed to maintain exploitation rates on stocks of concern within established limits by the use of fishing time and area closures in conjunction with fishing effort limits. The management plan distributes catch and effort throughout the fishing year.

The management plan is subject to change as required to address specific conservation concerns as they arise. For the 2012 fishing season the following changes to annual fishing plan were implemented:

As a result of poor escapement in 2011 additional conservation measures were required during the 2012 fishing season to further reduce the exploitation rate on Fraser River chinook Spring and Summer 5's. To accomplish this reduction in exploitation rate the June portion of the Area G fishery was cancelled.

To avoid exceeding the overall WCVI AABM TAC, 20% of the Area G TAC was allocated to September fisheries. If preliminary AABM catch estimates to August 31 indicate the overall WCVI AABM TAC may be exceeded, the Area G TAC set aside for September would be used to assist Canada with staying within its overall WCVI chinook TAC. For the 2012 season the amount of Area G TAC set aside for September fisheries was increased from 20% to 30% of the annual TAC.

Area G Troll Fishing Periods

<u>October to March period</u>

During the period from October 1 to March 15, a harvest level of approximately 20% of the Area G annual TAC was recommended, based on the PST chinook model calibration and assigned harvest levels for the outer WCVI area.

March 16 to April 15 period

For the 2011/12 year, a full time-area closure was maintained from March 15 to April 19 to avoid interception of spring 4s/5s and summer 5s Fraser River chinook.

Late April/mid-June period

During the period from April 20 to June 15, a harvest of approximately 40% of the Area G annual TAC was recommended, based on the PST chinook model calibration and assigned harvest levels for the outer WCVI area. In addition, effort (boat-days) was limited to recent year averages, and areas of SWVI were closed until May 7 (partial openings from May 1-7) in order to avoid interception of spring 4s/5s and summer 5s Fraser River chinook.

June 16 to July 24 period

A full time-area closure was maintained from June 15 to July 23 in Management Areas 125 to 127 and from June 16 to July 31 in Management Areas 123 to 124 to avoid interception of spring 4s/5s and summer 5s Fraser River chinook.

July 24 through early August

During this period, a harvest of approximately 20% of the Area G annual TAC was recommended, based on the PST chinook model calibration and assigned harvest levels for the outer WCVI area. In addition, the fishery was managed to minimize mortality on wild coho through: i) a maximum interception of coho, and ii) the mandatory use of large (minimum 4") plugs. As well, the fishery was managed to minimize mortality of WCVI origin chinook through the use of time-area closures of near shore areas ("chinook conservation corridor") where WCVI chinook stocks are prevalent.

September period

During the September period, a harvest of approximately 20% of the Area G annual TAC was recommended based on the PST chinook model calibration and assigned harvest levels for the outer WCVI area. The Area G harvest level in September has the potential to increase if there is available remaining WCVI AABM TAC after accounting for First Nation FSC and recreational fisheries. However, if First Nations or the recreational sector exceeds their expected catch the available Area G TAC is reduced. Any harvest opportunities prior to September 15 was managed to avoid interception of coho and WCVI origin chinook. After September 15, retention of adipose fin clip (AFC) hatchery origin coho was permitted.

For all troll fisheries, selective fishing practices were mandatory, including single hook/lure limits and several tasks for conducting non-retention species prior to release.

Since 1999, a major objective for the management of the WCVI troll fishery has been to distribute the catch throughout the fall-winter-spring-summer periods. This objective was continued in 2011/2012.

The late July and August plug fisheries were monitored to determine encounter rates of other species and estimate numbers of released chinook. Biological sampling was conducted for size distributions, and stock compositions (Coded Wire Tags, DNA and otolith samples).

Table 16: Post-Season Preliminary Monthly Catch Estimates for [redacted] Chinook Troll Fisheries

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
October	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
November	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
December	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
January	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
February	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
March	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
April	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
May	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
June	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
July	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
August	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
September	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Total	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

*Preliminary

[redacted] Area-wide First Nations Demonstration Fishery Summary

In addition to other considerations relating to aboriginal rights, [redacted] acknowledges that, in its November 1, [redacted] the British Columbia Supreme Court decision in Alexander Andrew Good et al. v. Canada and British Columbia, the Supreme Court found the plaintiffs (five Vancouver-area First Nations located on the West Coast of Vancouver Island – Ahousaht, Hesquiaht, Kyuquot, Mowachaht/Muchalaht, and Tlaoquiaht) have what the Court recognized as "aboriginal rights to fish for any species of fish within their Fishing Territories and to sell that fish."

The [redacted] Court of Appeal subsequently confirmed the [redacted] Supreme Court decision, except that it found that the rights do not included geoduck. The consultations and negotiations between the [redacted] and the Aboriginal five plaintiff First Nations, self-designated as "[redacted]", commenced in April [redacted].

Part of this consultation and negotiation process involved the implementation of an [redacted] chinook salmon demonstration fishery for the [redacted] fishing season. The fishery was opened up to portions of statistical Areas [redacted] on the west coast of Vancouver Island between July [redacted] and September [redacted]. The fishery was attended by [redacted] participants, seven of whom fished from large troll vessels. The remainder utilized current [redacted] size and under. Total catch estimated for the fishery is [redacted] chinook as of December [redacted].

The fishery was monitored by [redacted] observers and [redacted] staff. Biological samples for [redacted], and heads from salmon indicating presence of a coded wire tag, were collected by [redacted] Thomson and Associates.

[illegible]

[illegible]

[illegible]

[illegible] remaining to appeal. The conference came into effect July 1982 in three major wards of Nam-up Wards with respect to the three major wards of Nam-up Wards. Most contracting ended after September 30 with October 31 respectively. Exception of [illegible] project date. Prior to amendment to some municipal areas of Nandin and Mankin. Despite these facts it is [illegible] contributions to the [illegible] amounts have to. In New Nam-ships, Amends and members [illegible] were to Mon-Amal and [illegible] through Nandin [illegible].

Table 10. Settlement Of [illegible] Recruitment [illegible] Offers, Amends Credit and Motion by Action, 2012

[illegible]	Main	[illegible] Offers Major Fees	Total Amends [illegible]	Total Amends [illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Area [illegible]	[illegible]	[illegible]	[illegible]
	Nandin [illegible]			
	Mankin Area [illegible]	[illegible]	[illegible]	[illegible]
	Mankin Amends [illegible]	[illegible]	[illegible]	[illegible]
	Transport [illegible]	[illegible]	[illegible]	[illegible]
	Nandin [illegible]	[illegible]	[illegible]	[illegible]
	Transport [illegible]	[illegible]	[illegible]	[illegible]
	Auditors [illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Area [illegible]	[illegible]	[illegible]	[illegible]
	Area [illegible]	[illegible]	[illegible]	[illegible]
	Area [illegible]	[illegible]	[illegible]	[illegible]
	Area [illegible]	[illegible]	[illegible]	[illegible]
	Area [illegible]	[illegible]	[illegible]	[illegible]
	Area [illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]

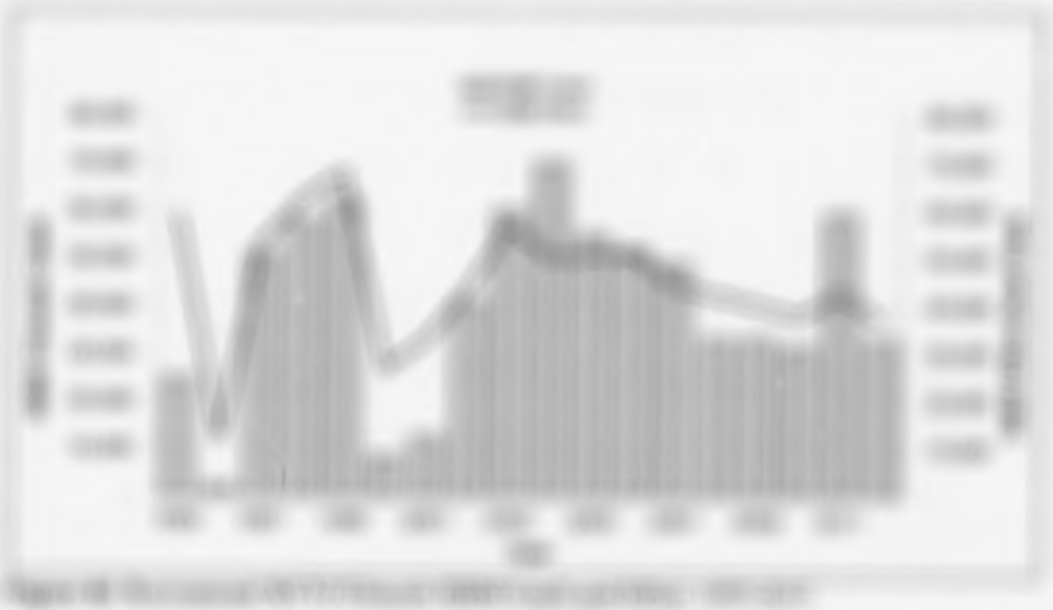


Figure 4.8: [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Inside Areas: Strait of Georgia, Johnstone Strait, and Juan de Fuca Strait

For Johnstone Strait and the Strait of Georgia north of Cadboro Point, sport catch regulations included an annual limit of 15 (15) chinook, a daily limit of two (2) chinook and a minimum size limit of 62 cm. For the Canadian portion of Juan de Fuca Strait south of Cadboro Point, the daily limit was two (2) chinook over 45 cm and a seasonal limit of 20 (20) chinook was in effect.

In those waters near Victoria between Cadboro Point and Sheringham Point (Areas 19-1 to 19-4 and Area 20-5), retention regulations were adjusted from March 1 to June 15 where anglers were permitted to retain two (2) chinook per day wild or hatchery marked between of 45cm and 67cm or hatchery marked only chinook over 67 cm in length. From June 16 to July 15 the daily limit remained at two (2) chinook with only one (1) chinook over 67 cm in length.

The "chinook corridor" extending from Subareas 18-1 to 18-6, 18-9, 18-11, 19-5 and a portion of 20-4 and 20-5 that lies south from a point on the east side of Wallace Island and extending 57 degrees true for 5 nautical miles remained in place in 2012. In this corridor the daily limit was two (2) chinook with a minimum size of 62 cm of which only one (1) could be over 67 cm from May 1 to July 15. From June 16 to July 15 the daily limit remained at two (2) chinook with only one (1) chinook over 67 cm in length.

Concern for Cowichan River chinook also prompted a restriction in Subareas 18-6 and 18-7 and 19-5 to 19-12. These areas saw chinook non-retention measures in effect from August 1 through October 15. Additionally, a portion of Subarea 18-7 and 18-8 east of a line from Separation Point to Williams Wharf in Cowichan Bay, across Satellite Channel to Saltspring Island was closed to all finfish fishing from August 1 through October 15. Cowichan Bay west of the Separation/Williams line was closed to all finfish fishing from August 1 through October 31.

Fraser River and Tributaries

Fraser River Spring 4-, as well as Fraser River Spring and Summer 5- chinook stocks of concern entering the Fraser River in Subareas 29-6, 29-7, 29-9 and 29-10 required additional management measures again in 2012 due to continued concerns about stock status. Starting May 1 to July 15 the daily limit for chinook was zero. The daily limit was increased to two (2) wild or hatchery marked fish between 62 cm and 77 cm from July 16 to 27th. From July 28th until December 31st, the daily limit for wild or hatchery marked chinook salmon was two (2) with a minimum length of 62 cm.

In the tidal (Subareas 29-11 to 29-17) and the non-tidal areas (Region 2) of the Fraser River there was no fishing for salmon from January 1st to July 15th. From July 16th to the 27th, the daily limit was one (1) wild or hatchery marked chinook, between 30 cm and 77 cm. From July 28th to August 31 the daily limit for wild or hatchery marked chinook salmon was four (4) with only one (1) over 50 cm. From September 1st to December 31st the daily limit for wild or hatchery marked chinook salmon was four (4) with only one (1) over 62 cm.

In addition, there were several tributaries to the Fraser River in which chinook retention was authorized including:

Nicomekl River, daily limit of one (1) chinook from July 1st to December 31st

The Chehalis River, daily limit of four (4) with only one over 50 cm from June 1st until August 10th and again from September 16th until December 31st , a daily limit of four (4) chinook with only one over 62cm.

The Chilliwack/Vedder River, daily limit of four (4) with only one over 62 cm from July 1st until December 31st

The Harrison River, daily limit of four (4) with only one over 62 cm from September 1st until December 31st

Tributaries to the Fraser River above Sawmill Creek in which chinook retention was authorized included:

Bowron River, daily limit of one (1) chinook less than 77cm from July 15 to August 15;

Fraser River (Prince George) , daily limit of one (1) chinook less than 77 cm from July 10 to July 25;

Cariboo River, daily limit of one (1) chinook less than 77 cm from July 27 to August 18;

Chilko River, daily limit of one (1) chinook less than 77 cm from July 25 to August 16;

Quesnel River, daily limit of one (1) chinook less than 77 cm from July 15 to September 1;

Fraser - Bridge River, daily limit of one (1) chinook from June 24 to 28, July 1 to 5, 0600 -2100 hours.

Fraser – Region 3, daily limit of four (4) chinook with zero over 50 cm from July 16 to September 16.

Clearwater River, daily limit of one (1) chinook with a monthly limit of two (2) which includes chinook caught in the North Thompson River from August 1 to August 21;

North Thompson River, daily limit of one (1) chinook with a monthly limit of two (2) which includes chinook caught in the Clearwater River from August 1 to August 21;

Thompson River, daily limit of four (4) chinook with zero over 50 cm from July 16 to August 21;

Thompson River, daily limit of four (4) chinook per day 1 over 50cm from August 22 to September 16;

South Thompson River, daily limit of four (4) chinook with 2 over 50 cm and monthly limit of six (6) over 50 cm from August 16 to September 22;

Middle Shuswap River, daily limit of one (1) chinook greater than 77 cm with a monthly limit of four (4) from July 25 to August 15;

Lower Shuswap and Mabbe Lake, daily limit of one (1) chinook greater than 77 cm with a monthly limit of four (4) from July 25 to August 15. Effective August 16 to September 12, daily limit of four (4) chinook with two (2) over 50 cm and monthly limit of four (4) over 50 cm.

In 2012, marine recreational fisheries were monitored by creel surveys in three main areas; 1) Juan de Fuca including Victoria (that portion of Area 19 south of Cadboro Point) and Juan de Fuca Strait through Areas 20-3; 2) Strait of Georgia including Areas 14 through 18, that portion of Area 19 north of Cadboro Point, 28 and 29; and 3) Johnstone Strait including Areas 11 to 13. Monitoring of the Strait of Georgia sport fishery (May to September) and Juan de Fuca Strait sport fishery (March to December) has been fairly consistent from year to year using an access point (landing site) survey for collecting catch, CPUE, and biological information combined with an aerial survey for effort counts. In addition, logbook programs, directed at estimating the recreational catch by fishing guides during guided trips, were conducted in the Campbell River and Victoria Areas in 2012. The Johnstone Strait creel survey commenced in Area 13 in May and continued through until end of September; and from June through August to include Areas 11 and 12.

Table 43. Preliminary Catch and Effort Estimates for Southern B.C. Inside Recreational ISBM Fisheries in 2012.

Fishing Area	Survey Period	Chinook Kept	Chinook Released	Effort (Boat Trips)
Strait of Georgia	May - Sep	11,254	34,406	50,490
Johnstone Strait	Jun - Aug	19,071	20,467	40,026
Juan de Fuca Strait	Feb - Oct	15,153	9,429	41,433
Fraser River [1]	Jul - Oct	10,931	7,265	n/a
TOTAL		56,409	71,567	131,949

[1] subject to change; Fraser River recreational assessments are preliminary as of December 1, 2012

First Nations Fisheries

WCVI FSC and Economic Opportunity Fisheries

In 2012 an agreement was reached with the Hupacasath and Tseshaht First Nations for an economic opportunity fishery targeting Somass chinook (Area 23). There was one economic fishery for a total catch of 9,400 chinook. Hupacasath and Tseshaht First Nations and Barkley Sound / Maanulth First Nation's catch reports indicate a combined ISBM FSC chinook harvest of 729 chinook. Outside WCVI First Nations ISBM catch is reported to be 500 for a total WCVI ISBM catch of 1229.

WCVI Excess Salmon to Spawning Requirements (ESSR) Fisheries

The Tseshaht and Hupacasath First Nations were issued a joint Excess Salmon to Spawning Requirements (ESSR) Licence for chinook at the Robertson Creek Hatchery facility. The total catch was 4,322 chinook (including jacks).

The Ditidaht First Nation was issued an ESSR Licence for chinook at Nitinat Lake and the Nitinat Hatchery. The catch was 2,087 chinook.

The total catch for both ESSR fisheries was 6,409 chinook.

Strait of Georgia FSC Fisheries

Data is still being compiled on various First Nations catches in the Strait of Georgia; however, preliminary catch is estimated at 181 chinook.

Strait of Georgia ESSR Fisheries

There was an ESSR fishery for 2915 chinook salmon. The fish were harvested in Big Qualicum hatchery.

Strait of Georgia Economic Opportunity Fisheries

There were no EO fisheries in the Strait of Georgia in 2012.

Johnstone Strait FSC Fisheries

Data are still being compiled on various First Nations catches in Johnstone Strait; however, preliminary catch is estimated at 321 chinook. There were no economic opportunity fisheries.

Fraser River FSC, Economic Opportunity and Inland Demonstration Fisheries

FSC fisheries, economic opportunity and inland demonstration fisheries took place in the Fraser River in 2012, harvesting ISBM chinook in both the upper and lower reaches of the Fraser River. Approximately 6,556 chinook were harvested in the upper Fraser River (above Sawmill Creek) in FSC fisheries (5,522) and demonstration fisheries (1,034).

The total chinook harvested in the lower Fraser River, (below Sawmill Creek), was 21,502 which includes mostly FSC (21,467). In 2012, chinook were to be released during the chum economic opportunity and demonstration fishery; however 35 fish were harvested during the economic opportunity and none during the demonstration fishery.

Commercial Fisheries

In 2012 commercial gill net fisheries in Tlupana Inlet (Nootka Sound) and Alberni Inlet targeted ISBM chinook on the WCVI. No other commercial fisheries targeted ISBM chinook in 2012.

Area D Gill Net

In 2012, gill net fisheries occurred in Tlupana Inlet targeting chinook returns to Conuma River hatchery. Area D gill net openings in Tlupana Inlet occurred on August 7 and 15th for a total chinook catch of 8,135. Maximum effort was 61 vessels per day.

An Area D gill net fishery took place in the upper Alberni Inlet targeting Robertson Creek hatchery chinook. A total of 51 vessels participated in a 2-hour opening for a catch of 1,285 chinook. There was also an incidental catch of chinook during the Area D sockeye fishery in June and July with 809 chinook retained and 236 released. The total WCVI commercial net ISBM harvest was 10,230 chinook.

Stock Status

Fraser River and Area Chinook

Interior Fraser

Spring chinook returns to the Fraser continue to be of concern. Returns to the Spring 5_2 aggregate remained at very low levels, although the aggregate as a whole escaped at approximately the same level as the 2007 parent brood. Some stocks were of particular concern, including Salmon River near Prince George (92) and Westroad River (~720).

Returns to the Spring 4_2 aggregate were also poor (~7,250 total), however most populations achieved or exceeded parental escapements. The aggregate escapement exceeded the parental brood escapement by approximately 20%.

Yearling (stream-type) summer chinook (Summer 5_2 aggregate) returns were also poor to modest, however, on average; returns were almost as abundant as the parent brood year escapements. In contrast, escapements to the late South Thompson ocean-type 4_1 aggregate declined steeply. Returns to the Lower Shuswap (~3800) and Middle Shuswap (~280) Rivers were of particular concern, averaging less than 30% of parent escapements. Returns to the South Thompson, Little River and Lower Adams were marginally better than those of the Shuswap Rivers; however, they only averaged about 60% of brood year escapements.

Lower Fraser River

Spring-run: Lower Fraser Spring chinook returns were also mixed. Returns to Birkenhead River (~600) were only about 30% the parental escapements (1968) and less than 2011 escapement (~950). Escapements to the upper Pitt River (Blue Creek) were estimated at ~103, equal to the estimate for the parent brood, in 2007.

Summer-run: Summer-run chinook returns to Maria Slough were approximately 400, much less than that observed in the parental brood year (~650). Returns to Big Silver Creek were estimated to be approximately 165, less than the 209 estimate for the parent brood. Information for other Lower Fraser summer populations is not available at this time.

Fall-run: Annual lower Fraser River fall-run chinook stock group escapements are, on average, large (>100,000). The major contributor and principal focus of assessment of this stock group is chinook returning to the Harrison River, and Harrison River transplants to the Chilliwack River. For both the Harrison and Chilliwack rivers, the field study portions of the escapement assessments are just concluding; and data entry and analyses have not started. Extreme weather events and fluctuating water levels in these systems make in-season assessments difficult. Field estimates for Harrison indicate escapements are likely to be under 60,000 adults. No in-season estimates have been developed at Chilliwack, and the preliminary escapement estimates will not be available for either system until early January.

Howe Sound/Squamish River

No information is available at this time.

Burrard Inlet

No information is available at this time.

Boundary Bay

No information is available at this time.

Strait of Georgia Chinook

Fall Stocks

Total returns to Strait of Georgia streams north of Nanaimo, virtually all of which are enhanced, have been stable for the last seven to ten years (Puntledge and Englishman rivers) or eighteen years (Big Qualicum and Little Qualicum rivers). In general, 2012 chinook escapements were similar to 2011 throughout the Strait of Georgia.

On the mainland side of the northern Strait of Georgia, Sliammon and Lang hatcheries continue to have variable returns, however in the last four years the returns to Lang Creek have been stronger than in previous years. There are a few very small, wild populations remaining in the Theodosia and Skwakwa rivers, and those rivers entering Jervis Inlet, where assessment data are poor or not available. Historically, a large proportion of the chinook stock aggregate originating from rivers north of Nanaimo migrate into central and northern B.C. and Alaska. Exploitation rates on this stock aggregate have gradually been reduced over the last 15 years, thus the stable trend in annual returns to rivers over this period suggests a reduction in marine survival.

In the southern Strait of Georgia, returns to the Nanaimo River have been generally stable since 1995 at slightly higher levels than those recorded back to 1975. Escapement to Nanaimo River in 2012, although not yet finalised, appear slightly lower than recent year averages. The area of most concern is further south, where chinook stocks returning to the Chemainus and Goldstream rivers have experienced declines in recent years. Unlike the central and northern Strait stocks, these southern populations historically rear within the Strait of Georgia. However, there appears to be an increasing proportion rearing off the west coast of Vancouver Island.

In particular, Cowichan River chinook (a wild chinook indicator stock) has been in decline since 1995-1996 and reached a low total adult return to river of 1260 in 2009. This population continues to be a stock of concern. Exploitation rates on Cowichan chinook were historically high (averaging 80-90%), declined to a low of 34% on the 1995 brood year, and then have steadily increased to 75% on the 2000 and 2001 brood years. Various harvest restrictions have been put into effect over the last 20 years to reduce exploitation on Strait of Georgia chinook. Additional conservation measures were introduced in 2005 to reduce the harvest of Cowichan chinook by the Strait of Georgia sport and WCVI troll fisheries. First Nations harvest of Cowichan chinook has been substantially reduced in recent years. The declining trends since 2000 in various southern Strait of Georgia rivers has been attributed to high exploitation rates, a decline in marine survival, and habitat issues.

In 2012 chinook escapement to Cowichan River was similar to 2011, maintaining rebuilding from the low escapement in 2009. A preliminary estimate of the freshwater entry is 3,700 adult and 1,200 jack chinook. Of these approximately 660 adults and 30 jacks were used for hatchery brood stock and about 2,700 adults and 1,060 jacks were estimated to spawn naturally. The

number of chinook caught in local FSC fisheries has not yet been reported. The near average number of age 2 jack chinook in 2012 suggests a similar or slightly lower escapement in 2013.

Spring Summer stocks

Of the three early runs in the Strait of Georgia, assessment data are available for Puntledge and Nanaimo; the Cowichan summer run still exists but it is small and quantitative data are not available for that stock. Efforts to recover Puntledge Summers to viable levels have resulted in improved returns to the river since 1999. The 2006 and 2007 natural spawning escapements ranged from 200 - 500 adults (not including brood capture), which is down from the record high in 2005 of approximately 2,500 adults, but is substantially higher than escapements recorded in the previous decades. The preliminary estimate for 2012 escapement to Puntledge is approximately 520 adults (including 250 brood removals) which was lower than the previous two years. Of concern is the exploitation rate which climbed sharply from a low of approximately 30% in 2001 to 55-60% in 2003-2004. Monitoring of Nanaimo spring and summer chinook escapement has occurred less frequently. This year's escapement of Nanaimo summers is estimated to be around 600 chinook adults and 30 jacks which is above average for the last 15 years.

West Coast Vancouver Island Chinook

The status of WCVI origin chinook has remained low for several years. Those populations that are not enhanced have remained well below target or declined since major El Nino events in the mid-1990s. Populations in the SWVI area (e.g. Area 24 and southward) tend to be lower status than those populations in the NWVI area.

2012 salmon escapement estimates from extensively surveyed WCVI streams are preliminary. Observations indicate escapements to wild indicator systems in both SWVI and NWVI systems are well below recent year averages and are similar to 2011 escapements. Returns to enhanced systems (Stamp, Conuma and Nitinat) were below average relative to recent years and similar to forecast.

For WCVI hatchery stocks, the terminal return is defined as total catch (First Nation, recreational and commercial) in the near approach areas of the hatchery plus escapement (brood collection plus natural spawners). In these approach areas, catch is dominated by the hatchery stock (e.g. >95%), therefore, higher exploitation rates are permitted than in times and areas dominated by naturally produced WCVI chinook stocks.

In 2012, the preliminary total terminal return of Stamp River/Robertson Creek hatchery chinook was approximately 34,000 adults, relative to the pre-season forecast of 34,000. The preliminary escapement through Stamp Falls is 14,800 adult chinook. The total terminal return to the Conuma River hatchery system was about 25,000 relative to a pre-season forecast of 29,000. The total terminal return to the Nitinat River hatchery system was about 13,500 relative to a pre-season forecast of 13,000. (All data are still being reviewed.)

Johnstone Strait/Mainland Inlet Chinook

Currently only two systems are monitored consistently in Areas 12 and 13. The Nimpkish River is assessed using standardized swim surveys and stream walks by hatchery staff and an intensive mark-recapture program is carried out by Quinsam hatchery to estimate escapement on the Campbell/Quinsam system. A mark recapture program on the Phillips River has been in development over the last few years with the plan to develop a mainland chinook indicator. Other systems are covered using intermittent visual surveys.

Nimpkish River

Preliminary observations from swim surveys indicate a significant increase in the abundance of chinook returning to the main spawning areas downstream of Woss Lake. Final estimates are not available at this time.

Campbell Quinsam System

Due to another large snow pack year, flows in the Campbell were higher than normal throughout the early summer, however remained moderate throughout the fall. In conjunction with relatively low and clear conditions on the Quinsam, visibility on both systems was good, providing some of the best conditions for dead pitch surveys in recent years.

Spawning occurred within the usual time frame on the Campbell River. A large proportion of chinook continue to utilize upper river spawning areas (above Second Island Channel) as well as the newly deposited gravel pads on river left (above the mill pumphouse).

Installation of the floating fence on the Quinsam (to assist with brood stock capture) occurred in early October. Chinook migrated in with rain events during the second week of October, with many fish already ripe. Due to the level of migration and ripeness at that time, initial estimates of the return were low. Final preliminary escapement has improved with the completion of the key stream mark recapture programs, with an estimated 4,955 adults returning to the Campbell/Quinsam system, a slight increase over the last two years. Hatchery brood targets were met, average fish size appeared to be smaller for both sexes and egg-take fecundities ranged at the lower end of normal.

Phillips River

A mark-recapture program on the Phillips River has been in development over the last few years. The preliminary escapement estimate for 2012 is approximately 2,400 chinook which is a significant improvement over the 2011 escapement estimate of 833 chinook. The local hatchery was able to meet its brood target and will plan to release 150,000 coded wire tagged (CWT'd) chinook smolts next spring to contribute to the assessment program.

Southern B.C. Coho

Objectives and Overview

In 2012 the abundance forecast indicated that the status of Interior Fraser River (including Thompson River) coho remained at category 1, Stock of Concern, as defined in the 2012 Salmon Outlook. The lower Fraser was categorized as low, while Georgia Strait (east and west) was stock of concern to low. Johnstone Strait coho management units were all forecast low to near target.

In 2012, Interior Fraser coho were a primary concern when implementing fisheries. Under the Abundance Based Management provisions in the Pacific Salmon Treaty, Canadian fisheries were managed to limit the total mortality to 3% across all Canadian fisheries. The total exploitation on Interior Fraser coho was limited to a maximum of 12% (including 10% U.S. exploitation).

To reduce the exploitation on Interior Fraser coho Canadian fisheries operating in areas of Southern B.C. where Interior Fraser coho are known to be prevalent are not permitted to retain wild "unmarked" coho. Wild coho retention is permitted in some terminal areas along the West Coast Vancouver Island (WCVI), in the Mainland Inlets, in a small portion of upper Johnstone Strait, and Queen Charlotte Strait, and in mixed stock areas after Interior Fraser coho migration is considered to be through these areas.

Table 44. Preliminary coho catch estimates of the recreational, First Nations (FSC, economic opportunity and EWR), and commercial fisheries for Southern B.C. in 2013.

	Kept	Released
Recreational	89,755	174,831
First Nations	42,532	7,853
Commercial	2,248	15,163
Total	134,535	197,797

Coho catch and release information from all fisheries can be found in Table 59.

Recreational

Tidal Recreational Fisheries

Tidal recreational fisheries can be categorized as occurring in mixed stock areas, where multiple stocks are found concurrently in the same fishing area, and in terminal areas where local origin stocks dominate the catch. These areas typically have different management measures to protect stocks of concern and where appropriate to provide harvest opportunities. The table below outlines the areas in Southern B.C. where these mixed stock fisheries occurred and the general regulations pertaining to them.

Table 45. Southern B.C. coho fishery regulations in 2013.

Mixed stock fishing area	Daily Limit marked or unmarked	Size Limit	Coho Season
Area 11	2	30 cm	June 1 - July 31
Area 12	2, 1 may be wild	30 cm	Aug 1 - Dec 31
Area 13	2, 1 may be wild	30 cm	June 1 - July 31
Area 13	1 marked	30 cm	Aug 1 - Dec 31
Strait of Georgia areas 14-19, 28, portions of 29 excluding some terminal areas and times	1 marked	30 cm	June 1 - Dec 31
WCVI offshore areas 123-127 and areas 11 and 29	2 marked	30 cm	Jun 1 - Aug 31
WCVI offshore areas 123-127 and areas 11 and 29	1 marked	30 cm	Sept 1 - Dec 31
WCVI inshore area 121, 22 and 23	2	30 cm	Jun 1 - Jul 31
WCVI inshore area 121, 22 and 23	1	30 cm	Aug 1 - Dec 31
WCVI inshore area 24 and 25	2	30 cm	Jun 1 - Aug 31
WCVI inshore area 24, 25	1, 2 may be wild	70cm	Sept 1 - Dec 31
Juan de Fuca areas 19-20	2 marked	30 cm	Jun 1 - Dec 31
Port San Juan 20-2	1, 2 may be wild	70cm	Sept 7 - Dec 31

The table below outlines coho catch and release information for recreational coho fisheries in Southern B.C. The WCVI coho fisheries had a boundary in place distinguishing coho catch in the mixed-stock fishery (outside the coho boundary) and catch in the terminal area (inside the coho boundary). This coho boundary was put in place to protect Interior Fraser River wild coho which are found off WCVI during mid to late summer.

Table 40. Recreational cable catch and effort estimates for Southern B.C. in 2015.

Area	Target	Retained	Effort (Boat Trips)
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

Straits of Kavango

Boeing 747-[illegible] flows [illegible] seasonal [illegible] throughout the Straits of Kavango.

- Blackmore Rivers Group (Kavango / Mbeti to Mbeti): [illegible] km, [illegible] m³/s, [illegible] months, [illegible] m, [illegible] m
- Chimwemwe Rivers Group (Kavango / Mbeti to Mbeti): [illegible] km, [illegible] m³/s, [illegible] months, [illegible] m, [illegible] m
- Delhi / Blackmore Rivers — [illegible]
- Rushbridge Rivers (Kavango / Mbeti to Nyumbiko): [illegible] km, [illegible] m³/s, [illegible] months, [illegible] m, [illegible] m
- Tsitsimbe Rivers (Kavango / Lake Nyumbiko): [illegible] km, [illegible] m³/s, [illegible] months, [illegible] m, [illegible] m
- [illegible] Rivers (Kavango / Lake Nyumbiko): [illegible] km, [illegible] m³/s, [illegible] months, [illegible] m, [illegible] m

Mount Kavango Transverse Ridges

Sun Rock Rivers

[illegible] seasonal [illegible] flows [illegible] [illegible] [illegible]

[illegible] Alcove and [illegible] Alcove and Other Alcove Locations

The [illegible] and [illegible] are [illegible] [illegible] [illegible]

[illegible]

[illegible]

In 2012, Southern B.C. commercial fisheries were regulated so that impacts on coho, in particular Interior Fraser coho stocks, were minimized. Terminal opportunities to retain coho by-catch during directed chinook and chum fisheries were available to Area D gill nets.

Area G troll A4/B/N chinook fisheries are permitted to retain incidentally caught Salmonid Enhancement Program (SEP) marked coho after September 15 until March 15. For the 2011/12 (October 1, 2011 to September 30, 2012) A4/B/N chinook fishing periods, the estimated total coho retained was 1,988 and releases during this period were estimated at 7,776 coho salmon.

[illegible]

In 2012, commercial gill net and seine fisheries occurred in Alberni Inlet and off-shore from Nitinat Lake. Gill net fisheries occurred in Tlupana Inlet, outer Barkley Sound, Nootka Sound and Esperanza Inlet. When targeting sockeye, chum or hatchery chinook, returns harvesters may encounter and retain or release coho by-catch. In 2012 the total WCVI coho by-catch in commercial sockeye, chum and chinook net fisheries was 159 retained and 1,899 released.

[illegible]

Upper Fraser

Field programs to estimate escapements are still underway, and only very preliminary results are available for some systems. Early returns to the Interior Fraser River indicate that escapement has likely increased in comparison to 2011 returns and are likely at levels above those observed in the 2009 parent brood escapements. Very preliminary data indicate returns to the entire Interior Fraser River may range between 40,000 and 60,000; however, preliminary estimates are not yet available for many systems, and near final estimates will not be available until early February, as most field studies are not yet completed.

Lower Fraser

The Lower Fraser Area (LFA) can be divided into four sub-areas: lower Fraser River, Howe Sound/Squamish River, Burrard Inlet and Boundary Bay.

(i) Lower Fraser River
Escapement studies are currently underway, and many populations have not reached peak spawning at the time of writing. Preliminary escapement estimates for the surveyed systems should be available by late February 2013.

A hatchery coho indicator stock is provided by Inch Creek hatchery. Adult escapement is assessed annually and marine survival and exploitation rates are calculated, these estimates are not yet available. Adult coho visual surveys are conducted for a number of systems within the lower Fraser River sub-area as part of multi-species assessments, however estimates are not yet available as the field programs will not be complete until late January or early February 2013.

(ii) Howe Sound/Squamish River
Assessments for Howe Sound and Squamish River are incomplete at this time. Staff at the DFO Tenderfoot hatchery will be taking brood stock until February 2013.

(iii) Burrard Inlet
An assessment of the returns to DFO Capilano hatchery is not yet complete. The 2012 abundance and status of this stock group is not known at this time.

(iv) Boundary Bay
Community-run SEP projects contribute significantly to coho returns to this sub-area. The 2012 data will not be available until late February 2013.

Strait of Georgia

The observed 2010 marine survivals for both wild and hatchery coho were lower than the previous year (0.7% to 0.8% hatchery; wild 1.6%). These levels are less than replacement levels. The forecast models predicted continuing low levels of marine survival in 2012, 0.5% to 0.9% for hatchery stocks and 1.4% to 2.1% for wild stocks. This regime of low marine survivals has been observed since the early 1990s.

Hatchery stocks

The preliminary 2012 coho escapement estimates of monitored hatcheries show a continuation of increasing escapements from the low returns in recent years. Escapements to northern Strait of Georgia stocks (Puntledge, Qualicum, Lang) are average to higher over the short term. The standout escapement was Qualicum River which had a much higher than average escapement, allowing a non-tidal fishery to proceed. Escapements to southern Strait of Georgia stocks (Nanaimo, Goldstream) are below the short term average but improving over the last couple of years. These stocks are slowly increasing over the brood year escapements.

Wild stocks

There are two wild indicators in the Strait of Georgia at Black Creek and Myrtle Creek.

Myrtle Creek
The 2012 Myrtle Creek project is ongoing and results will not be available for another month. The escapement is expected to be higher than 2011 (20 adults) which was an improvement over previous years (2010 escapement was 13 adults, similar to previous years). A spawning habitat project was started in 2011 to augment the limited spawning habitat in this creek and continued in 2012 with additional spawning gravel placed this year. The 2012 forecast of marine survival was 2.4%.

Black Creek
The 2012 Black Creek Adult project is ongoing, escapement to date has been above average with moderate to high water levels since the third week of October. The majority of adult coho have moved past the fence, but low levels of fish will continue to migrate into early December. Dead pitch commenced in the second week of November (early). Initially, minimal carcasses were encountered, however recovery improved in the latter part of November. The preliminary escapement (fence count) of 5,167 adults is higher than 2008-2011 estimates, the second highest escapement in 10 years, and appears to be similar to that of 2007 (5,453 adults). The 2012 escapement may be a continuation of the building trend of the past several years (2008-2010), with the 2011 escapement being an anomaly. The preliminary 2012 forecast of marine survival is 2.07%.

West Coast Vancouver Island

There are two indicator stocks in WCVI: Robertson Creek Hatchery and Carnation Creek. In 2012, preliminary escapement to Robertson Creek Hatchery is estimated at about 24,400; similar to that expected, and slightly lower than recent year averages. Escapement to the Carnation Creek indicator system is under review. Preliminary estimates of escapement to other WCVI systems suggest escapement at about recent year averages. However, the overall abundance of WCVI coho was low given the relatively limited harvest of these populations relative to historic periods.

Johnstone Strait and Mainland Inlet

The Keogh River plays an important role as the wild coho indicator stock for the upper Johnstone Strait Area. Smolt production in 2011 was around 90,000, the second highest production since 1997 and well above the long term average of 59,000. Preliminary indications from the resulting adult escapement in 2012 are that marine survival has improved significantly compared to the last few years. Smolt production from the Keogh in 2012 of approximately 108,000 was significantly higher than the long term average and may result in a strong return in 2013 if marine conditions stay the same or improve.

The marine survival indicator for Area 13 is the Quinsam River Hatchery. Coho were slow to move into the Quinsam River this year; migration usually coincides with rain events in early October, however no major influxes of fish were observed at the hatchery fence, nor were large numbers staging in the upper or lower areas of the Campbell. At the time there was concern over angling pressure on a potentially low escapement. However, migration continued steadily throughout the remainder of the fall, with a late showing of fish arriving with heavy rains towards the beginning of November. The preliminary estimate of 5,757 adult coho returning to the Quinsam River is comparable to 2007 and 2008; adult body size this year was variable. The jack component of the run, an estimated 2,767 fish (32% of the return), is the largest proportion of jacks observed in the last six years (2007-2012); jack body size was also noted as larger than usual.

Preliminary extensive escapement reports for coho are also indicating abundances lower than both 2010 and 2011 in some systems, but above average escapements for a few scattered systems. At this time it is still too early to provide an indication of stock status.

Johnstone Strait Chum

Objectives and Overview

The Johnstone Strait chum fisheries primarily target chum that spawn in Johnstone Strait, Strait of Georgia, and Fraser River areas. In order to improve the management of Johnstone Strait chum fisheries and to ensure sufficient escapements, a 20% fixed exploitation rate strategy was implemented in 2002 in Johnstone Strait. This year constituted the 11th year of the fixed exploitation rate harvest strategy. Of the 20% exploitation rate, 16% is allocated to the commercial sector; the remaining 4% is set aside for the First Nations and recreational harvesters. Since the implementation of this management strategy, annual fisheries have been planned well in advance of the chum return.

For commercial fisheries, the pre-season fishing schedule was developed based on expectation of effort, exploitation levels by gear group, and historical run timing (peak estimated as October 9th). The fishing schedule was developed to achieve the commercial allocation sharing guidelines of 77% for seine, 17% for gill net and 6% for troll. Adjustments to the fishing plan are made in-season, if warranted.

Based on the Pacific Salmon Treaty chum salmon agreement, commercial chum fisheries in Johnstone Strait are suspended when an abundance estimate of less than 1 million chum salmon migrating through Johnstone Strait is identified.

In 2012, the Area B (seine) and Area D (gill net) were competitive derby fisheries.

The Area H (troll) fleet was managed using an effort based individual transferable effort (ITE) demonstration fishery for the 5th year (2008 - 2012). A total of 330 boat-days (185 in period 1 and 145 in period 2) were modeled to correspond to the troll share of the harvest rate described above, and two time periods were defined to spread the catch over a 34 day period. Each Area H licence holder was assigned three boat-days in period 1 and two boat-days in period 2. Boat-days from each period could be transferred to other licence holders within each period but not between periods. The transfer of boat days between fishing periods was not permitted in 2012. Subareas 13-6 and 13-7 (Deepwater Bay area) were closed to commercial fishing on weekends and holidays.

Chum catch and release information from all fisheries can be found in Table 60.

First Nations

First Nations fisheries for chum were not restricted. The preliminary estimated catch by First Nations in the Johnstone Strait area is 10,597 chum salmon.

Marine Recreational

The marine recreational daily limits for chum are four (4) per day and a possession limit of eight (8). The total recreational catch in Johnstone Strait, Areas 11, 12 and 13, was estimated at 1,000 chum this season as catchability for the recreational fleet was low compared to recent years. The peak of the effort coincided with the annual Brown's Bay chum derby which took place on the weekend of October 27 and 28, 2012. The total catch during the derby was 224 chum. This year, there was no creel survey in the month of October when the majority of the chum salmon fishing effort occurs in Area 13.

Non-tidal recreational

There is anecdotal information of limited recreational chum fisheries in non-tidal waters in the Johnstone Strait area. Overall effort and catch is not estimated but expected to be minimal.

Commercial

The commercial chum fisheries in Johnstone Strait occurred between September 28 and October 31. The total commercial chum catch from Johnstone Strait during chum directed fisheries is estimated at 391,324 pieces. This represents the total catch of chum in Johnstone Strait for 2012 as no other commercial fisheries occurred.

There was a general requirement to apply selective fishing techniques, including area and gear restrictions and the mandatory use of revival tanks in all commercial fisheries. Catch monitoring included requirements for catch reporting and mandatory logbooks.

A description of each fishery is provided below:

Area B Seine

In 2012, there were two commercial seine openings for chum salmon in portions of Areas 12 and 13. The first opening took place on October 3 for 12 hours and the second opening took place on October 22 for 10 hrs, and October 23 for five hours. The first opening was originally scheduled for October 2 but was postponed by one day because of strong winds. The second opening was extended for an additional five hours on October 23 due to lower than expected effort during both openings.

The chum catches for the first and second openings were estimated at 203,413 pieces and 85,081 pieces respectively; for a total catch of 288,494 chum.

Area D Gill net

In 2012, there were three 41 hour commercial gill net openings for chum salmon in portions of Areas 12 and 13. The first opening took place from 16:00 hours on October 5 to 09:00 hours on October 7, the second opening from 16:00 hours on October 11 to 09:00 hours on October 13 and the third opening from 16:00 hours on October 24 to 09:00 hours on October 26.

The estimated chum catches for the three Area D gill net fisheries were 28,351 pieces, 34,761 pieces and 12,171 pieces respectively; for a total estimated catch of 75,283 pieces.

Area H Troll

In 2012, the Area H troll ITE demonstration fishery was divided into two fishing periods: September 28 to October 14 (period 1) and October 16 to October 31 (period 2). Each vessel was allocated three boat days during the first fishing period and two days during the second fishing period. Boat days could be transferred between vessels within each fishing period. Boat days could not be transferred between fishing periods in 2012.

The chum catch for the first fishing period was 13,981 pieces and 13,566 pieces for the second fishing period, with a total chum catch of 27,547 pieces. Total effort for the Johnstone Strait fishery was 248 boat days.

Table 47: Johnstone Strait Commercial Catch and By Date and Gear Type

Gear Type	Fishery Dates	Effort	Catch
B - Seine	Oct 3	86	203,413
	Oct 22 and 23	77	85,081
D - Gill net	Oct 5-Oct7	157	28,351
	Oct 11-Oct 13	143	34,761
	Oct 24-Oct 26	81	12,171
H - Troll	Sep 28-Oct 14	151	13,981
	Oct 16-Oct 31	97	13,566

Table 48: Johnstone Strait Fisheries (Area 12 and 13)

Gear Type	Total Catch	% of catch	J.S. Allocation Plan
Area B	288,494	73.7%	77%
Area D	75,283	19.2%	17%
Area H	27,547	7.0%	6%
Total Catch:	**391,324**		

Stock Status

Mixed Stocks

The main components of the Inside South Coast (ISC) chum return was expected to be both Fraser and non-Fraser stocks. These stocks are typically dominated by four year old fish which out-migrated to the ocean in 2009. It was quite apparent that other salmon species that also out-migrated in 2009 encountered lower productivity and reduced survivals (pinks and coho returns in 2010). The pre-season expectation for ISC chum suggested low to near target returns to the area.

The Johnstone Strait test-fishery provided timing and abundance information of the 2012 return which is important for assessing the performance of the 20% fixed exploitation rate strategy. It also provided an index of abundance that was used to determine the likelihood of whether the abundance of returning chum is over the 1.0 million critical level required to continue with commercial openings. Catch per unit effort in the test fishery was relatively strong and it was determined that the ISC index of abundance was likely above the 1.0 million critical level. Age composition derived from the test-fishery and commercial samples demonstrated a higher than normal contribution of the five-year old brood component. The samples also demonstrated that the size of the fish tended to be larger than average especially early in the season. The strong CPUE in the test fishery and high contribution of Age five adult indicate that the good survivals during the 2008 outmigration of the juveniles carried over both in the Age four and Age five returns (2011 and 2012).

Preliminary information on escapements and catches to date suggest returns were average to above average in most populations including the Fraser. In-season information is still being collected and analyzed regarding total stock size.

Terminal returns

Most summer run chum returns in Area 12 have shown improved return abundance relative to parental broods in 2007 and 2008. No age information was collected from the spawning grounds, but it is highly likely that the composition of Age 5 fish matched what we saw in the fall timed stocks.

Preliminary information on the status of fall run chum in the Johnstone Strait Area indicates returns are below average for a variety of systems within the area. Initial observations on the Nimpkish River indicate low abundance of returning chum.

Fraser River Chum

Objectives and Overview

Chum salmon return to the Fraser River from September through December, with the typical peak of migration through the lower river occurring from mid to late-October. Spawning locations are predominately located in the Fraser Valley downstream of Hope, B.C., with major spawning aggregations occurring within the Harrison River (including Weaver Creek and Chehalis River), the Stave River, and the Chilliwack River. No spawning locations have been identified upstream of Hells Gate.

The escapement objective for Fraser River chum is 800,000. Since 2001, this objective has been achieved in all but two years. Escapements in 2009 and 2010 did not meet the escapement goal, with approximately 460,000 and 550,000 returning to spawn in those years, respectively.

General Overview of Fisheries

Fraser River chum are typically harvested in Johnstone Strait, the Strait of Georgia, Juan de Fuca Strait, in U.S. waters of 7 and 7A, as well as in the Fraser River.

Within the Fraser River, chum-directed fisheries include: First Nations FSC fisheries; recreational fisheries; and commercial fisheries. In recent years, significant conservation measures have been implemented in river during the Fraser River chum migration period in order to protect co-migrating stocks of concern (Interior Fraser coho and Interior Fraser steelhead). Depending on the fishery, these measures have included both time and area closures, as well as gear restrictions. These conservation measures have restricted Fraser River commercial chum fishing opportunities in the past several years, resulting in significant economic consequences to the Area E Gill Net fleet due to the limited opportunities to access chum allocations.

Catch data from all chum fisheries can be found in Table 60.

First Nations

FSC gill-net fisheries commenced October 6th (below Mission) and October 12th (above Mission) following closures to protect co-migrating Interior Fraser coho. The estimated catch from all fisheries (includes FSC, Economic Opportunity, Demonstration, Treaty, and ESSR) below Sawmill Creek was 165,844. There were 30,374 chum harvested in FSC fisheries, 76,274 harvested in Economic Opportunity fisheries, 15,238 harvested in the Demonstration fishery, 10,775 harvested in the Tsawwassen Treaty fisheries, and as of December 3 there have been 33,183 chum reported harvested through ESSR fisheries. ESSR harvests are ongoing for 2012.

Recreational

In 2012, some of the major Fraser River watershed recreational salmon fisheries impacting chum salmon were assessed, including significant salmon fisheries occurring in the lower Fraser River mainstem and the Chilliwack River (a tributary to the Fraser River in the lower Fraser Valley).

The lower Fraser River mainstem recreational fishery was open to the retention of chum salmon from July 16th to December 31st (with a daily limit of two (2)). In 2012, this mainstem fishery was assessed from July 16th to November 30th; in-season estimates to October 31st of kept and released chum are 2,329 and 6,851 respectively. The Chilliwack River recreational fishery was

open to the retention of chum salmon from July 1st to December 31st. The Chilliwack River fishery was assessed from September 1st to November 15th in 2012. In-season estimates, to October 31st, of kept and released chum are 4,239 and 28,175 respectively. These in-season estimates will change once analysis of the fishery data collected after October 31st is complete.

The Harrison River, Stave River and Nicomen Slough recreational fisheries were originally open to the retention of chum salmon year round (daily limit of two (2)). In 2012, no assessment was conducted on the Harrison River or Stave River fisheries; however, the Nicomen Slough/Norrish Creek fishery was assessed from October 7th to November 30th. In-season estimates, to October 31st, of kept and released chum are eight (8) and 1,029 respectively. These in-season estimates will change once analysis of the fishery data collected after October 31st is complete.

In total, for assessed recreational fisheries occurring in the lower Fraser River area in 2012, current in-season estimates, to October 31st, of kept and released chum are 6,576 and 34,055, respectively.

Commercial

The Fraser River chum test fishery at Albion operated every other day from September 1st until October 19th, alternating days with Albion chinook test fishery. From October 21st until November 30th, the chum net fished every day. In 2012, the total number of chum harvested during the Albion chum assessment was 8,799 fish. The Albion chinook test fishery caught an additional 4,388 chum.

Commercial fisheries in the lower Fraser River (below Mission) remained closed during the Interior Fraser coho window closure and further closures were in place until late October to meet requirements of the Interior Fraser steelhead objective. One Area E Gill Net commercial opening took place in the Fraser River (Area 29) during the 2012 chum season, consisting of a 24-hour duration fishery on October 25-26, 2012 for a total estimated harvest of 63,987 chum salmon retained and 13 released.

Stock Status

The number of adult chum returning to the Fraser River each fall is estimated in-season with a Bayesian model based on Albion test fishing catch. Catch of chum was very high at Albion all season, particularly in the mid-October period, when the largest catches were observed in the history of this test fishery. In the Johnstone Strait, test fishing was initially strong, but was sporadic through the remainder of the year, due to poor weather and significant interference from marine mammals. chum returns through Johnstone Strait tracked between 3 to 3.5 million, with indications that the timing of the run may be earlier than average.

The average body size of Fraser River chum was large in 2012, particularly early in the run. This same trend was also observed in the Johnstone Strait test fishery, and was partly attributed to a large contribution of five year old chum in the early weeks of the test fishery. While age composition is not yet available for chum sampled from Albion, we suspect that this data will also indicate that the large average body size seen in the early component of the return was similarly due to a strong showing of five year old returns.

For fishery planning purposes, and given early indications of a strong chum return to the Fraser River, the Department provided a provisional in-season update on October 16th of 1.9 million

chum. Confidence intervals and estimates of peak run timing were not provided at this time, as the 50% migration date for the run had not yet been confirmed.

A subsequent estimate of Fraser River chum abundance was provided on October 22nd. The estimated return on that date was 2.326 million (80% probability interval of 1.975 to 2.713 million), with a 50% migration date through the lower river of October 14. This peak date was much earlier than that observed in recent years (average peak date from 1998-2011 is October 19).

The final in-season estimate of run size (provided on October 24th) was 2.253 million (80% probability interval of 1.928 to 2.609 million), with a 50% migration date of October 14th.

Fraser River chum salmon return to numerous spawning locations in the lower Fraser River and its tributaries. A quantitative stock status has not been prepared for Fraser River chum salmon (i.e. in the manner of Strategy 1 of Canada's Policy for Conservation of Wild Pacific Salmon); however, spawning escapement is currently assessed annually for four of the six largest chum producing systems, as well as for a number of smaller tributaries. From the late 1990's up to and including 2009, the spawning escapement for these annually assessed Fraser River chum systems had trended downwards. Although a modest increase in escapement was estimated in 2010, both the 2009 and 2010 chum salmon escapement was estimated at less than the established 800,000 escapement goal. Escapement estimates for 2011 improved on the modest increase estimated in 2010 such that the escapement goal was achieved.

Current year assessments are still ongoing, however in-season escapement estimates for 2012 align with the Albion based in-season estimates of terminal run size, that indicate a continuation of this increasing trend in chum salmon spawning escapement.

Strait of Georgia Chum

Objectives and Overview

Strait of Georgia chum fisheries consist of terminal opportunities for chum returning to their natal spawning streams. Many of the potential terminal fishing areas have enhancement facilities and/or spawning channels associated with the rivers. Terminal fishery strategies consist of monitoring and assessing stocks (escapement and returning abundance) with the objective of ensuring adequate escapement and providing harvest opportunities where possible. Stock assessments may include test fisheries, escapement enumeration, and river flights. In some areas where stocks receive considerable enhancement or where stocks have above average productivity, limited fishing may occur prior to major escapement occurring.

Commercial

Area 14

This fishery is directed at the enhanced stocks of three systems: Puntledge, Qualicum and Little Qualicum rivers. The Qualicum River is often referred to as the 'Big' Qualicum River, to better distinguish it from the Little Qualicum River. Chum returning to this area have been enhanced since the late 1960's and terminal fisheries have occurred in October and November since the 1970's. The returning Area 14 chum abundance is forecasted pre-season using brood escapement, average survival and age composition. In-season run strength is assessed from any early catches, visual observations at river estuaries and by escapement counts to the three river systems. The escapement goals for the three river systems are 60,000 for Puntledge River, 130,000 for Little

Qualicum River, and 100,000 for Qualicum River, adding up to an overall escapement goal of 240,000 chum not including enhancement facility requirements (about 10,000 chum bringing the total escapement goal to 250,000). For 2012 preliminary escapement estimates indicate the Qualicum and the Little Qualicum rivers will achieve their target escapements. The Puntledge River to November 15 had achieved approximately 90% of its escapement target.

This fishery has a specific harvest strategy, implemented since 1981. The strategy consists of limited early harvest prior to escapement occurring. The allowable early chum harvest is calculated from 65% of the predicted surplus (terminal return less the lower escapement of 300,000 and buffer of 100,000). The buffer safeguards against errors in forecast stock abundance. The surplus within the 100,000 buffer and remaining 35% of the surplus may be harvested provided that escapement targets have been achieved. Since 2002, Puntledge River stock returns have been above average resulting in terminal fisheries focusing on this slightly earlier timed stock. In 2012 limited seine, gill net, and troll fisheries took place in Area 14.

The 2012 Area 14 pre-season forecast predicted a chum return between 207,400 to 311,000. The total return of chum salmon to Area 14 streams was within the forecasted range. The preliminary estimate of total return (catch plus escapement to the three key Area 14 systems, the Qualicum River (100K one target), the Little Qualicum River (125K) and the Puntledge River (100K) is 348,000.

There was an Area 9 gill net and an Area 9 troll opening in portions of Area 14 on October 28 through to October 30 targeting Puntledge River hatchery chum stocks. This was an exploratory fishery to determine abundance after numerous independent reports of large bodies of chum salmon in the approach areas to the Puntledge River.

Gill net catches in the opening were lower than anticipated and the fishery was not extended past the original 48 hour opening period. No Area 9 trollers participated in the opening. There was an Area 9 gill net and Area 9 seine opportunity targeting Big Qualicum chum from November 04 to November 15 in sub-areas 14-4 and 14-5. This fishery opened when the escapement target (100,000) to the Big Qualicum River was achieved. Catches in these openings were extremely low.

The estimated commercial chum catch in Area 14 to November 29 is 14,159 for gill nets. There was no seine catch reported.

Chum catch and release information from all fisheries can be found at Table 40.

Area 16

This fishery targets wild chum stocks returning to river systems in the Area 16W area. The main systems are Toquart, Stranford and Sproat rivers. The overall escapement goal for Area 16W streams is 110,000. These terminal fisheries occur when the individual or combined escapement goals have been assured. Fishing opportunities do not occur on a regular basis. There were no fisheries in Area 16 in 2012.

Area 17

This fishery is a terminal fishery targeting Nanaimo River stocks. The Nanaimo River chum stocks are supplemented by the Nanaimo River hatchery (supplementation is on a rolling cycle), where increased enhancement occurs during poor escapement years. Escapements fluctuate annually and fishery openings are planned on season based on escapement estimates. The overall escapement goal for the Nanaimo River is 60,000. There were no fisheries in Area 17 in 2012.

Area 29

This fishery is directed primarily at Crowshaw River stocks; however, Goldstream-share are also harvested. Fishery openings are tied to the November 20 Opinion Channel to allow for minimal impacts on Goldstream stocks. Chinampeau River stocks could also be impacted if the fishery was earlier in November, but likely to a lesser extent.

Fishery openings are planned to ensure based on escapement estimates from a DEMARS counter and information from a test fishery. Management is also guided by advice from the Crowshaw Fisheries Roundtable, the Roundtable and the Mid Vancouver Island (MVI) Chum Subcommittee. The overall escapement goal for the Crowshaw River is currently 100,000 chum counted by the DEMARS counter. Three test gillnet and seine fisheries in Area 29 with gillnets catching 65,000 chum and seines catching 35,000 chum.

The Area 29/29 area test fishery in conjunction with the DEMARS fish counter provide timely in-season stock information regarding chum returns to the Crowshaw system. If conditions call it are held with the Crowshaw Fisheries Roundtable Harvest Committee to discuss stock status and potential fishing opportunities. As of November 15 the Crowshaw chum escapement was 115,000. Escapements will be monitored until December 01.

Area 19

This fishery is directed primarily at Goldstream River stocks although some Crowshaw River chum salmon are also harvested. Fishery openings on this area in late November are limited to the portion of Saanich Inlet (Sub area 19-24) which is outside of to the north of Squally Reach. This area restriction is implemented to minimize impact on Goldstream chinook and coho stocks.

Fisheries are planned in-season based on escapement estimates and catch follows. Area 19 falls under the same management regime as Area 18. The overall escapement goal for the Goldstream River is 17,000. There were no fisheries in Area 19 in 2012.

Chum catch and release information from all fisheries can be found in Table 10.

First Nations

Food, Social and Ceremonial Fisheries

The preliminary estimated FSC catch by First Nations in the Strait of Georgia is estimated to be approximately 1,170 chum; additional catch data is currently being compiled.

DFAR Fisheries

The Ki'anuko First Nation was issued an DFAR Licence for chum and incidental catch of coho and chinook at the Pumbridge River Hatchery. There was no surplus chum for an DFAR fishery this year as a result of the Pumbridge River not achieving its chum escapement target.

The Qualicum First Nation was issued an DFAR Licence for chum and incidental catch of coho and chinook at the Big Qualicum River Hatchery. The total chum harvest was 1,017 chum.

The Wuikinuxv First Nation had an DFAR harvest at the CHAR Hatchery on Wuikinuxv Creek. The First Nation harvested 1,019 chum salmon.

[illegible] Police were issued on [illegible] however the claim to be have used from the [illegible] Bureau. The Post Office had valued [illegible] shade address.

The total [illegible] have on the Group [illegible] [illegible] shade address.

Recruitment

The majority of recruitment offers focused on shade address survey in the [illegible] positions of the Bureau to Manage area, particularly in the course around Campbell Street. These [illegible] positions are reported with the [illegible] Shade shade committee, position [illegible]. Some interest shade followers take place in the approach course of the Northridge and Eastbourne Bureau into the south side office on [illegible] was also advertise nationally and locally.

Valid recruitment followers are subject to the normal shift and permanent home shade. Each Post [illegible] per day-to-permanent staff [illegible] and are open throughout the area. In all cases, applicants were [illegible] to the use of [illegible] shade and there was a requirement was [illegible] of [illegible] recruitment recruitment to over followers every three employees to begin assignments with be new. These followers were offered evening [illegible], where [illegible] facilities are [illegible]. Details on these opportunities are reported in the Valid Bureau Shade Holiday Guide and also in the Positions and Applications. Recruitment Managers and opportunities are also available online on the Shade Bureau recruitment followers website: [illegible]

The recruitment used service, recently from the student area of Bureau to Manage, example of [illegible] Bureau to Research Shade. The majority of recruitment offers focused on shade address survey in the Bureau to Manage area of Solicitor. Recruitment monitoring throughout the [illegible] of Europe, example of [illegible] shade survey, each [illegible] [illegible] [illegible]

[illegible]

[illegible] [illegible] [illegible] [

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[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

Esperanza stocks have been at or below the LRP for four of the last five years, and the 2012 forecast was for the return to be below both the target escapement and the limit reference point. Limited effort assessment fisheries were not conducted in 2012.

First Nations Food, Social and Ceremonial and Treaty Domestic fisheries for chum salmon occur primarily in terminal areas. Excess Salmon to Spawning Requirements fisheries were conducted by the Ditidaht First Nation at Nitinat Lake targeting Nitinat hatchery surplus production. Economic Opportunity fisheries were carried out by the Hupacasath and Tseshaht First Nations in upper Alberni Inlet and in the lower Somass River.

In-river recreational fisheries generally have low effort, but recently effort has increased in some terminal area rivers (i.e. Nitinat River). Directed effort and catch of chum in recreational marine fisheries off WCVI remains low.

Chum catch and release information from all fisheries can be found in Table 60.

First Nations

The Ditidaht First Nation conducts annual chum FSC fisheries and in years of higher chum abundance operates ESSR fisheries in Nitinat Lake and rack harvests at Nitinat hatchery.

Tseshaht and Hupacasath First Nations conducted chum catch monitoring and chum adult enumeration surveys in Alberni Inlet local river systems in 2012 under contract with DFO. Observations were reported weekly to DFO Stock Assessment and Resource Management staff.

WCVI FSC and Economic Opportunity Fisheries

In 2012, an agreement was reached with the Hupacasath and Tseshaht First Nations for an economic opportunity fishery targeting chum (Area 23). Their catch in the economic fishery was 700 chum. Their FSC catch was 500, for a total catch of 1,200 (EO and FSC combined). The remaining WCVI First Nations including Mac-uilth FSC catch was reported as 5,568 chum. The total combined catch for the WCVI First Nations was 6,068 chum.

ESSR Fisheries

The Ditidaht First Nation was issued an ESSR Licence for chum at Nitinat Lake and Nitinat hatchery. The catch was 22,402 in the lake and 27,536 at the hatchery. The total catch for the ESSR fisheries was 49,938 chum.

Recreational

The WCVI recreational fishery is open year-round with a limit of four (4) per day. Anglers are restricted to the use of barbless hooks and there is a minimum size limit of 30 cm. In offshore and inshore areas of WCVI there is minimal recreational effort on chum. Based on anecdotal evidence, recreational anglers kept an estimated 20 chum in offshore areas and 60 chum in inshore.

There was also a chum fishery in the Nitinat River which was open from October 15 until December 31. The daily limit was two (2) chum per day and anglers were restricted to the use of barbless hooks. This fishery was not monitored by creel survey in 2012.

Commercial

Nitinat

There were seine and gill-net commercial fisheries in 2012 based on abundance in Nitinat Lake and River. The pre-season forecast for Nitinat chum was 292,400. The return is estimated at approximately 275,000. In previous years the Nitinat commercial chum fishery was the largest on the West Coast of Vancouver Island. This fishery targets returning Nitinat River hatchery stocks. The fishing period is generally October 1st to November 15th. The fishery is managed to achieve a minimum escapement target of 225,000 and maximum escapement target of 325,000 chum salmon. The commercial TAC is based on the pre-season forecast which is updated in-season with information from the Nitinat Lake test-fishery and escapement information. Nitinat commercial chum catch totals are found in Table 52 and Table 53.

Area B Seine

In 2012 the Area B seine fishery was not successful. The fishery was open for two (2) days, October 21 and 27, with a small fleet of 10 boats. The total catch for both fisheries was 97 chum.

Area E Gillnet

In 2012 the Area E fishery was open for six (6) days Oct 6-7, Oct 19-20 and 21-22. The total catch was 23,219 chum and the peak effort was 61 vessels.

The total commercial catch for Nitinat Chum was 23,316.

Barkley (Area 23), Clayoquot (Area 24) and Nootka Esperanza (Area 25)

Commercial chum fisheries in Areas 23, 24 and 25 are typically managed using weekly in-season effort estimates. The harvest-rate approach is designed to achieve a harvest rate of 20% or less on all stocks in Nootka Sound and 10 to 15% in Esperanza Inlet, Clayoquot Sound and Barkley Sound chum stocks. In Tlupana Inlet, where hatchery stocks are predominant, exploitation rates may be higher in years of higher abundance.

The main objective of the gill net assessment fishery strategy is to provide advance indication of chum salmon abundance that could initiate larger fleet fisheries in Nootka Sound and Tlupana Inlet.

Gill net assessment fisheries took place in Areas 23 and 24.

Barkley Sound (Area 23)

In 2012 the fishery opened for six (6) days Sep 30- Oct 1, Oct 9-10, and Oct 16-17. The total catch was 3,532 chum. The effort was four vessels.

Clayquot Sound (Area 24)

In 2012 the fishery opened for six (6) days Oct 9-10, Oct 16-17, and Oct 23-24. The total catch was 1,147 chum. Only one vessel participated in this fishery although up to three would have been permitted.

Table 52. 2012 Commercial Chum Area D Limited Effort Gill Net Fisheries Summary (Barkley and Clayoquot Sounds)

	Barkley Sound (Area 23)			Clayoquot (Area 24)		
Fishing Date	Effort (Vessels)	Chum Catch	Coho Retained	Effort (Vessels)	Chum Catch	Coho Retained
30-Sep	4	816	21	*no fishery*		
01-Oct	4	445	5			
09-Oct	4	876	2	1	340	27
10-Oct	4	438	4	1	394	43
16-Oct	4	782	1	1	260	8
17-Oct	3	175	2	1	151	10
23-Oct	0	0	0	1	2	1
24-Oct	0	0	0	0	0	0
Total/Avg	**23**	**3632**	**35**	**5**	**1147**	**89**

Table 53. 2012 Commercial Chum Fisheries Summary (Nitinat)

	Nitinat (Area 21) - GILL NET			Nitinat (Area 21) - SEINE		
Fishing Date	Effort (Vessels)	Chum Catch	Coho Retained	Effort (Vessels)	Chum Catch	Coho Retained
06-Oct	68	7,442	0	0	0	0
07-Oct	66	6,840	0	0	0	0
19-Oct	37	6,918	0	0	0	0
20-Oct	37	2,011	0	0	0	0
21-Oct	1	8	0	10	97	4 released
22-Oct	1	0	0	0	0	0
Total	**210**	**23,219**	**0**	**10**	**97**	**0**

Stock Status

Productivity of chum populations in the WCVI conservation unit (CU) was average to above average from 2001 to 2006. Low returns from 2007 to 2010 reflect a decline in productivity most likely related to lower than average marine survival rates, particularly during the 2005 to 2007 sea entry years. Chum returns in 2011 showed some improvement, likely due to the favorable 2008 sea entry year and returns were about average in SWVI but still well below average in NWVI. However, 2012 chum returns were poor. Overall, chum escapement to most natural systems in the WCVI CU was approximately 50% lower than the long term average (1995-2005).

All 2012 salmon escapement estimates from extensively surveyed WCVI streams (summarized in the Figure 47) are preliminary and represent peak live plus dead counts.

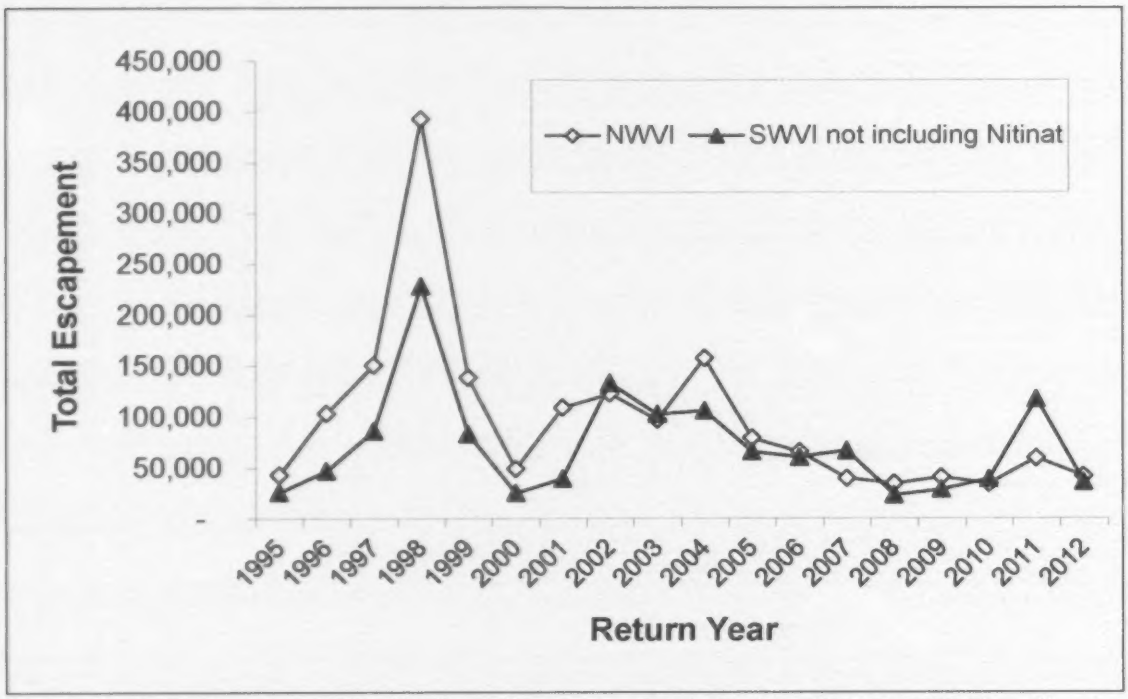

Figure 47: Escapement of WCVI Chum Stocks, by Catch Region (SWVI, NWVI) and Return Year (1995-2012). 2012 escapement estimates are incomplete and very preliminary.

Table 54: Catches in Canadian Treaty Limit Fisheries, 1995 to 2012 (Preliminary)

Fisheries/Stocks	*Species*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*	*2006*	*2005*	*2004*	*2003*	*2002*	*2001*	*2000*	*1999*	*1998*	*1997*	*1996*	*1995*
Stikine River (all gears)	Sockeye Coho Chinook -lg Chinook -jk	30,352 5,748 4,573 1,213	55,623 4,703 2,307 1,165	50,543 4,952 1,766 1,001	48,049 5,061 2,330 714	33,614 2,398 7,860 1,067	59,237 47 10,576 1,735	101,209 72 15,776 2,078	85,890 276 18,997 2,177	84,866 275 3,857 2,574	58,784 190 1,396 1,052	17,294 82 1,362 578	25,600 233 1,480 103	27,468 301 3,086 628	38,055 181 2,916 1,264	43,803 726 2,164 423	65,559 401 4,483 286	74,281 1,404 2,471 421	53,467 3,418 1,646 860
Taku River (commercial gill net)	Sockeye Coho Chinook -lg Chinook -jk	30,209 8,689 1,909 478	24,012 6,102 2,333 514	20,211 10,349 4,658 697	11,057 5,649 7,031 1,183	19,445 4,866 1,184 330	16,564 5,399 862 337	21,093 9,180 7,312 198	21,932 6,860 7,534 821	19,860 5,954 2,074 334	32,730 3,168 1,894 547	31,053 3,082 1,561 291	47,660 2,568 1,458 118	28,009 4,395 1,576 87	20,681 4,416 908 257	19,038 5,090 1,107 227	24,003 2,594 2,731 84	41,665 5,028 3,331 144	32,640 13,629 1,577 298
Areas 3 (1-4)* (commercial net)****	Pink	118,164	160,757	30,686	404,460	8,330	1,740,270	228,378	878,552	402,459	667,103	876,631	473,318	127,000	2,162,280	61,000	329,000	987,000	2,613,000
Area 1 (commercial troll)****	Pink	57,013	52,221	19,948	60,402	29,295	61,276	34,854	39,430	27,751	98,347	41,418	175,000	28,295	25,000	0	261,000	732,000	1,284,000
North Coast** (troll + sport)	Chinook	120,305 80,256 + 40,050	122,660 74,660+ 48,000	136,613 90,213+ 46,400	109,470 75,470+ 34,000	95,647 52,147+ 43,500	144,235 83,235+ 61,000	215,985 151,485 + 64,500	243,606 174,806+ 68,800	241,508 167,508 + 74,000	191,657 137,357 + 54,300	150,137 103,037 + 47,100	43,500	32,048	70,701	144,650	145,568	26,900	119,100
West Coast Vancouver Island (troll + sport + FN)	Chinook	130,719 62,573 + 61,822 + 4,300		137,660 79,123+ 52,698+ 5,839	125,488 53,191+ 68,775+ 3,381	143,817 89,704 + 50,319+ 3794	139,150 87,921 + 46,229 + 5,000	145,970 103,978 + 36,992 + 5,000	195,791 143,614 + 52,177	210,875 168,837+ 42,038	179,706 152,677 + 27,029	165,824 134,308+ 31,516	102,266 78,302 + 23,964	89,139 64,216 + 24,923	28,540 6,906+ 21,634	10,855 6,678+ 4,177	50,796 53,396+ 6,400	3677 4+ 3,673	86,230 81,258+ 4,972
Fraser River Canadian Commercial Catch	Sockeye Pink	0 0	443,000 4,751,800	9,305,104 0	0 1,442,840	16,942 0	0 333,300	4,633,623 68,325	137,000 338,000	1,993,800 0	1,042,986 1,149,189	2,182,700 0	295,000 579,000	953,000 0	54,000 3,000	1,295,000 0 0	8,737,000 0 3,660,000	1,019,000 0 0	903,000 3,777,000 0
Fraser River U.S. Commercial Catch	Sockeye Pink	105,100 0	266,000 2,893,400	1,970,000 0 0	0 2,726,230	49,800 0	3,900 377,600	701,300 0	0 0	192,200 0	244,000 773,000	434,600 0	240,000 427,000	494,000	41,000 3,000	707,000 0	1,578,000 0 1,565,000	257,000 0	415,000 1,919,000
West Coast Vancouver Island (commercial troll)	Coho	1,988		458	0	369	1,424	2,399	5,989	0	0	0	0	0	0	0	0	761,000	1,345,000
Johnstone Strait (clockwork catch)***	Chum	27,547		62,510	510,708	298,931	494,944	800,363	787,226	1,089,100	1,026,029	700,000	236,000	161,000	41,411	1,820,000	104,593	101,971	269,000

*AREA 5-11 CATCHES INCLUDED PRIOR TO 1995 AND EXCLUDED FROM 1995-1998 INCLUSIVE. NOT PART OF 1999 ANNEX IV PROVISIONS.
** NORTH COAST CATCH EXCLUDES TERMINAL EXCLUSION CATCHES OF 6,000 ('91), 6,100 ('92), 7,400 ('93), 6,400 ('94), 1,702 ('95), 16,000 ('96), 5,943 ('97), and 2,182 in 1998. NO TERMINAL EXCLUSION IN THE 1999 AGREEMENT - COVERED UNDER THE AABM ARRANGEMENT; CENTRAL COAST AREAS NOT PART OF 1999 ANNEX IV PROVISIONS.

*** CANADIAN CATCH INCLUDES COMMERCIAL, FSC AND TEST-FISH CATCHES IN AREAS 11-13 FOR 1991-94 INCLUSIVE, AND IN AREAS 12-13 FOR 1995 TO 2004 INCLUSIVE. 2002-PRESENT, CATCHES FROM FISHERIES MANAGED TO FIXED HARVEST RATE OF 20%.
****ALL PINK CATCHES FOR ALL YEARS (1995-2011) IN AREAS 3(1-4) AND AREA 1 HAVE BEEN UPDATED TO REFLECT FINAL ESTIMATES.
NOTE 1: WCVI CHINOOK CATCHES FROM 1995-1998 ARE REPORTED BY CALENDAR YEAR; CATCHES FROM 2008-1999 ARE REPORTED BY CHINOOK YEAR (OCT-SEPT).
NOTE 2: 1999 CATCHES ARE REPORTED ACCORDING TO FISHERIES/STOCKS UNDER THE 1999 ANNEX IV PROVISIONS.

Table 19. Preliminary 2012 South Coast Sockeye Catch by Fishery and Area

Fishery	Gear	Fishery (Areas)	Numbers: Non-Fraser Wild	Numbers: Fraser Wild	Numbers: All stocks Released
Commercial	Area 6 Troll	WCVI Inside Chinook (27, 2-1, 121, 123)			
	Area 4 Troll	JDF Chum (11-13)			
	Area 12 Troll	Mid-Chum (14)			
	Area 8 Seine	Barkley Sockeye (24)	[illegible]		[illegible]
	Area 8 Seine	Mainst Chum (21, 121)			
	Area 8 Seine	JDF Chum (11-13)			
	Area 8 Seine	Fraser Chum (29)			
	Area 8 Seine	Cowichan Chum (Area 18)			
	Area 8 Seine	Mid-Chum (14)			
	Area 7 Gillnet	Barkley Sockeye (24)	[illegible]		
	Area 7 Gillnet	Barkley Chum (23)			
	Area 7 Gillnet	Somass Chinook (23)			
	Area 7 Gillnet	Clayoquot Chum (24)			
	Area 7 Gillnet	Tyaquna Chinook (25)			
	Area 7 Gillnet	JDF Chum (11-13)			
	Area 7 Gillnet	Mid-Chum (14)			
	Area 6 Gillnet	Fraser Chum (29)			
	Area 6 Gillnet	Mainst Chum (21, 121)			
	Area 6 Gillnet	Cowichan Chum (Area 18)			
Total Commercial Catch			[illegible]		
Recreational*	Sport	Juan de Fuca (19,20)			[illegible]
	Sport	Strait of Georgia (14-5, 28, 29)			[illegible]
	Sport	Johnstone Strait (12, 13)			[illegible]
	Sport	WCVI - Nitinat (124-1)	[illegible]		[illegible]
	Sport	WCVI - Remote (121-123)	[illegible]		[illegible]
	Sport	Fraser Total			[illegible]
Total Recreational Catch			[illegible]		[illegible]
First Nations FSC		Johnstone Strait	[illegible]	[illegible]	
		Strait of Georgia		[illegible]	
		WCVI	[illegible]	[illegible]	
		Fraser Total		[illegible]	[illegible]
Total First Nations FSC Catch			[illegible]	[illegible]	[illegible]
First Nations EC		Johnstone Strait			
		Strait of Georgia			
		WCVI	[illegible]		
		Fraser Total			
Total First Nations EC Catch			[illegible]		
First Nations ES/SR		Johnstone Strait			
		Strait of Georgia			
		WCVI			
		Fraser Total			
Total First Nations ES/SR Catch					
TOTAL - ALL FISHERIES			[illegible]	[illegible]	[illegible]

*No DNA samples available to estimate Fraser composition or catch estimates outside of WCVI marine areas.

Table 9b: Preliminary 2012 South Coast Pink Catch by Fishery and Area

Fishery	Area	Fishery Areas	Numbers	
			Pink	Permanent
Commercial	Area A Total			
	Area A Total			
	Area A Total			
	Area A Total			
	Area A Total			
	Area A Total			
	Area A Total			
	Area A Total			
	Area A Total			
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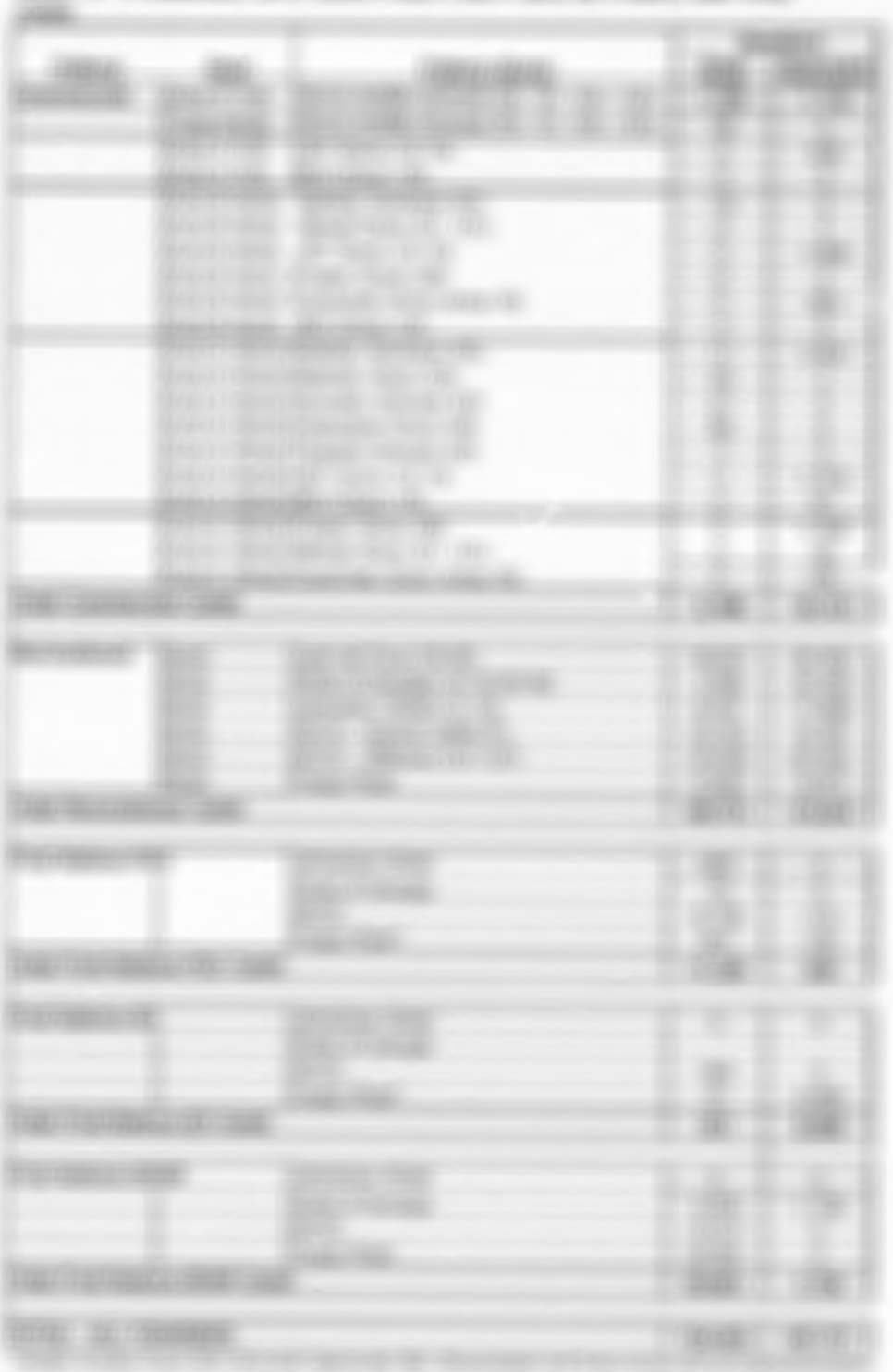
	Area A Total			
	Area A Total			
	Area A Total			
Total Commercial Catch				
Recreational	Sport			
	Sport			
	Sport			
	Sport			
	Sport			
	Sport			
	Sport			
Total Recreational Catch				
First Nations FSC				
Total First Nations FSC Catch				
First Nations EC and Stevie				
Total First Nations EC Catch				
First Nations ISCAB				
Total First Nations ISCAB Catch				

[illegible]

[illegible]



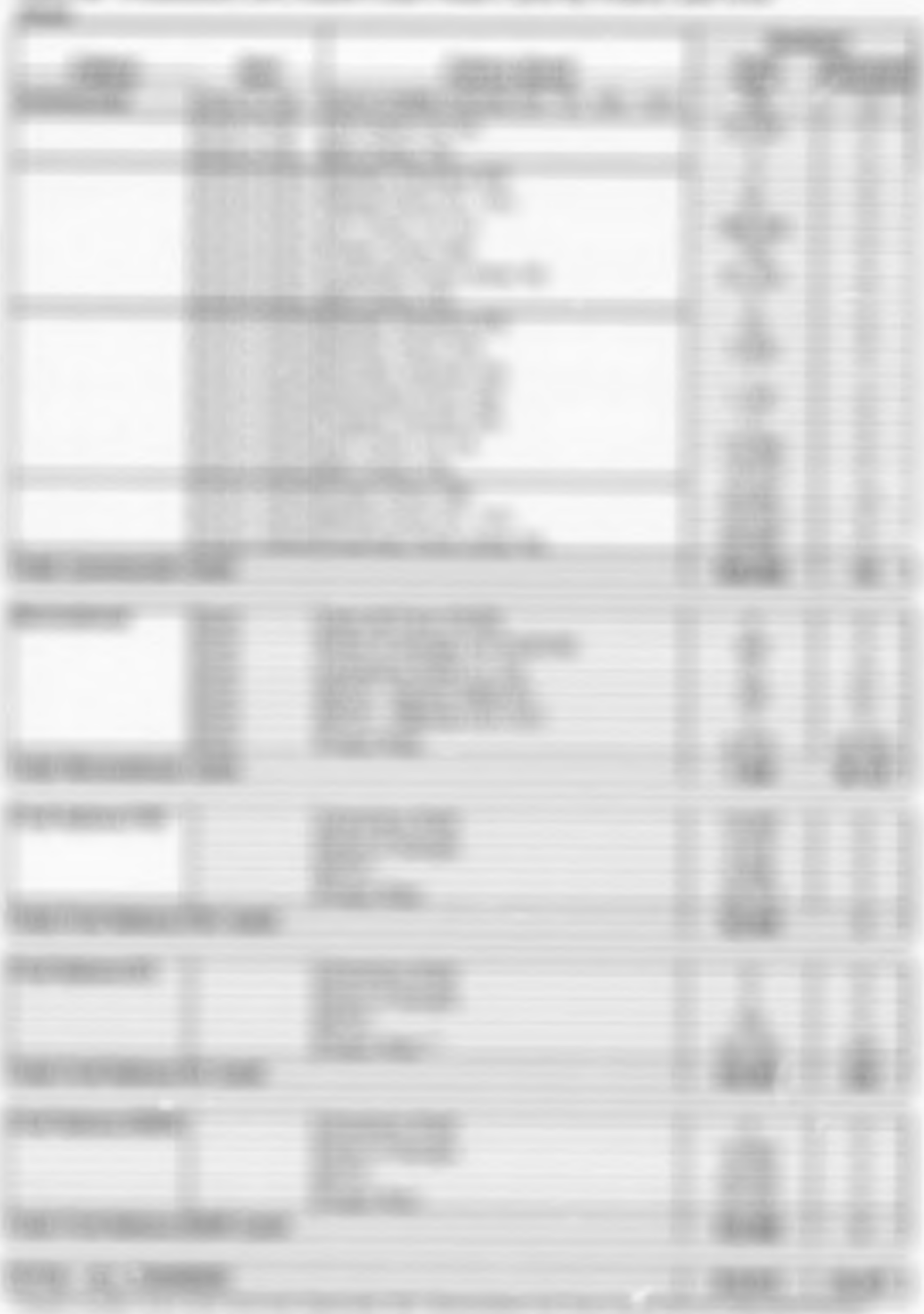


Table 6E: Preliminary 2012 Southern B.C. Commercial Catch Totals By Gear and Area

Retained and all species

Licence Group	Fishing Area	Sockeye Kept	Sockeye Released	Coho Kept	Coho Released	Pink Kept	Pink Released	Chum Kept	Chum Released	Chinook Kept	Chinook Released
Area 6 Troll	WCVI Inside Deeper (20 - 27, 123 - 127)	0	2	1,866	7,796	217	118	180	13	55,530	6,163
Troll without Gear	WCVI Inside Deeper (20 - 27, 123 - 127)	0	0	36	0	0	0	0	0	6,396	0
Area 12 Troll	JET Chum (10,13)	0	0	0	439	13	10	27,547	0	0	52
Area 12 Troll	MAV Chum (28)	0	0	0	0	0	0	0	0	0	0
Area 6 Seine	Sockeye Deeper (20)	75,899	140	10	0	0	0	0	0	1	210
Area 6 Seine	Sockeye Chum (21, 121)	0	0	2	0	0	0	327	0	0	0
Area 6 Seine	JET Chum (10,13)	0	0	0	1,200	174	65	190,454	2	0	30
Area 6 Seine	Pink Chum (29)	0	0	0	0	0	0	104	0	0	0
Area 6 Seine	Coho Chum (Area 18)	0	0	0	303	0	0	31,103	0	0	7
Area 6 Seine	MAV Chum (28)	0	0	0	0	0	0	0	0	0	0
Area 3 Gillnet	Sockeye Deeper (20)	110,100	0	11	1,247	1	23	25	0	205	230
Area 3 Gillnet	Sockeye Chum (23)	0	0	36	0	0	0	3,102	0	0	0
Area 3 Gillnet	Coho Chum (29)	0	0	21	0	0	0	1	1	1,245	0
Area 3 Gillnet	Pink Chum (29)	0	0	46	0	0	0	1,167	0	0	0
Area 3 Gillnet	Chinook Chum (29)	0	0	0	0	0	1	11	0	6,130	40
Area 3 Gillnet	JET Chum (10,13)	0	0	0	1,373	0	10	75,283	0	0	7
Area 3 Gillnet	MAV Chum (28)	0	0	0	47	23	0	14,273	0	0	0
Area 2 Gillnet	Pink Chum (29)	0	0	0	1,502	0	0	62,997	13	1	30
Area 2 Gillnet	Sockeye Chum (21, 121)	0	0	0	58	0	0	23,216	0	0	0
Area 2 Gillnet	Coho Chum (Area 19)	0	0	0	102	0	0	40,466	0	0	1
TOTALS		186,199	142	2,128	15,648	428	228	514,286	29	73,508	6,770

Table 62: 2012 Southern B.C. Recreational Catch Totals By Area

	Sockeye Kept	Sockeye Released	Coho Kept	Coho Released	Pink Kept	Pink Released	Chum Kept	Chum Released	Chinook ISBM Kept	Chinook ISBM Released	Chinook AABM Kept	Chinook AABM Released
Juan de Fuca (19,20)	21	1,924	16,621	44,343	234	72	0	0	15,153	9,429		
Strait of Georgia (14-18,28,29)	89	1,108	3,569	24,340	4,753	3,020	445	0	11,254	34,406		
Johnstone Strait (11-13)	4	363	6,031	11,688	10,935	24,171	53	31	19,071	20,467		
WCVI - Inshore (20W-27)	17,839	335	25,253	16,387	96	67	190	61	33,021	14,430	8,856	5,453
WCVI - Offshore (121-127)	177	470	25,638	63,402	67	242	0	0	NA	NA	53,717	45,574
Fraser River	0	22,933	12,661	14,671	0	0	6,576	36,055	10,931	7,265	0	0
TOTAL	18,130	27,133	89,773	174,831	16,085	27,572	7,264	36,147	89,430	85,997	62,573	51,027

All totals are preliminary.
JDF includes all of 19 and a portion of Area 20 (20 SG).
WCVI Inshore contains a portion of 20W (West of Sherringham)

Table 63: 2012 Southern B.C. First Nations Catch Estimates By Area

Fishery type	Fishing Area	Sockeye Kept	Sockeye Released	Coho Kept	Coho Released	Pink Kept	Pink Released	Chum Kept	Chum Released	Chinook ISBM Kept	Chinook ISBM Released	Chinook AABM Kept	Chinook AABM Released
FSC	Johnstone Strait	23,400	0	640	0	7,446	0	10,597	0	321	0		
	Strait of Georgia	14,994	0	10	0	8	0	5,270	0	181	0		
	WCVI	34,871	0	9,729	110	10	0	6,068	0	1,229	10	6324	50
	Fraser River	434,847	3,282	941	129	2	2	30,374	2	27,037	104	0	0
TOTAL		**508,112**	**3,282**	**11,320**	**239**	**7,466**	**2**	**52,309**	**2**	**28,768**	**114**	**6,324**	**50**
EC	Johnstone Strait												
	Strait of Georgia												
	WCVI	151,049	0	300	0	0	0	700	0	9,400	0	0	0
	Fraser River	0	18	51	5,868	0	11	102,287	249	1,069	566	0	0
TOTAL		**151,049**	**18**	**351**	**5,868**	**0**	**11**	**102,987**	**249**	**10,469**	**566**	**0**	**0**
ESSR	Johnstone Strait	0	0	0	0	65,276	0	0	0	0	0	0	0
	Strait of Georgia	0	0	3,453	0	0	0	19,865	0	2,915	0	0	0
	WCVI	0	0	13,517	0	0	0	49,938	0	6,409	0	0	0
	Fraser River	0	0	33,891	0	0	0	33,183	0	9,875	0	0	0
TOTAL		**0**	**0**	**50,861**	**0**	**65,276**	**0**	**102,986**	**0**	**19,199**	**0**	**0**	**0**
All FN fisheries		**659,161**	**3,300**	**62,532**	**6,107**	**72,742**	**13**	**258,282**	**251**	**58,436**	**680**	**6,324**	**50**

Table 64: 2012 South Coast Test-Fishery Catches

Test-Fisheries	Sockeye retain	Sockeye release	Coho retain	Coho release	Pink retain	Pink release	Chum retain	Chum release	Chinook retain	Chinook release	GRAND TOTAL
Albion Chinook Gillnet	608	0	0	35	0	0	4,368	0	817	0	5,848
Albion Chum Gillnet	12	0	0	272	1	0	8,799	0	222	0	9,306
Area 12 Chum Seine	0	7	0	222	0	400	1,276	76,849	0	20	78,776
Naka Creek Sockeye Gillnet	1,546	0	0	158	602	0	25	0	7	5	2,343
Area 13 Sockeye Seine	2,802	3,016	0	119	1,144	18,370	0	263	0	102	25,816
Area 23 Sockeye Seine	1,046	3,276	0	2	0	0	0	0	0	88	4,412
Blinkhorn Sockeye Seine	3,667	10,386	0	361	2	106,855	0	836	0	314	124,421
Cowichan Chum Seine	0	0	0	10	0	0	483	23,172	0	1	23,666
Saanich Chum Seine	0	0	0	1	0	0	0	588	0	0	589
Nitinat Lake Chum Gillnet	0	0	0	64	0	0	10,789	1	7	2	10,863
Round Island Sockeye Gillnet	820	4	0	287	978	8	32	0	30	21	2,180
San Juan Sockeye Seine	4,604	13,174	0	3,150	0	216	0	96	0	999	22,239
Qualark Gillnet	1,639	0	0	0	0	0	0	0	230	29	1,898
San Juan Sockeye Gillnet	10,545	1	0	1,429	39	0	54	0	363	136	12,567
Whonnock Gillnet	1,670	41	0	68	0	0	274	6	464	19	2,542
Cottonwood Gillnet	1,072	17	0	62	0	0	18	2	97	26	1,304
Grand Total	**30,031**	**29,922**	**0**	**6,240**	**2,766**	**127,849**	**26,140**	**101,815**	**2,237**	**1,761**	**328,761**

D. 2012 UPDATE REPORTS FOR SALMONID ENHANCEMENT PROGRAMS IN THE UNITED STATES AND CANADA

The Pacific Salmon Treaty between Canada and the United States requires that information be exchanged annually regarding operation of and plans for existing enhancement projects, plans for new projects, and views concerning the other country's enhancement projects. In 1989, a committee was formed to develop recommendations for the pre- and post-season enhancement report formats. In summary, the committee proposed that:

- detailed reports on existing enhancement facilities of the type produced in 1987 be prepared every four years;
- the Parties will annually update information on eggs taken, fry or smolt released and adults back to the facility; significant changes in facility mission or production will be highlighted in narratives; and
- the Parties will provide periodic reports through the appropriate panels on new enhancement plans.

1. 2004 ANNUAL REPORT ON THE SALMON ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2013.

2. 2005 ANNUAL REPORT ON THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2013.

3. 2006 ANNUAL REPORT ON THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2013.

4. 2007 ANNUAL REPORT OF THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2013.

5. 2008 ANNUAL REPORT OF THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2013.

6. 2009 ANNUAL REPORT OF THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2013.

7. 2010 ANNUAL REPORT OF THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2013.

9. 2012 ANNUAL REPORT ON THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2013

10. 2013 ANNUAL REPORT ON THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2013

11. 2006 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN ARIZONA

This report had not been received by March 31, 2013

12. 2007 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN ARIZONA

This report had not been received by March 31, 2013

13. 2008 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN ARIZONA

This report had not been received by March 31, 2013

14. 2009 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN ARIZONA

This report had not been received by March 31, 2013

15. 2010 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN ARIZONA

This report had not been received by March 31, 2013

16. 2011 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN ARIZONA

This report had not been received by March 31, 2013

17. 2012 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN ARIZONA

This report had not been received by March 31, 2013

Reports of the Joint Technical Committees

[illegible]

Table 6-2 Preseason allowable catches for 1999 to 2011, and postseason allowable catches and observed catches for 1999 to 2011, for A SBM fisheries.

[illegible] Years Allowable and Observed Catches[1]									
Year	SE/AK (T, N, S)[2]			WBC (T, S)			WCVI (T, S)		
	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch
1999	442,000	384,500	450,862	107,600	126,100	79,125[3]	120,500	107,000	98,940
2000	480,000	479,500	486,497	139,000	125,500	93,648[3]	107,500	90,200	88,617[3]
2001	480,000	284,500	340,319	113,600	109,000	85,775[3]	140,200	107,500	120,168[3]
2002	336,500	373,000	397,035	105,700	107,000	104,153[3]	201,200	196,000	197,006[3]
2003	560,100	479,600	500,192	107,100	107,200	106,162[3]	180,000	200,000	175,363[3]
2004	380,500	458,500	467,819 [420,000][4]	200,600	207,000	200,386[3]	192,500	209,600	219,292[3]
2005	454,400	387,400	390,479	200,600	200,700	207,606	188,200	179,700	189,479
2006	340,000	370,500	362,442	221,200	200,000	219,900	160,400	167,500	167,407
2007	320,400	299,200	328,564	179,600	167,000	188,219	167,300	151,900	180,618
2008	279,600	192,000	175,140	158,000	120,900	95,647[3]	162,600	136,900	147,726
2009	318,000	276,000	270,451	167,000	159,100	109,479	187,000	93,500	153,647[3]
2010	321,000	307,000	291,501	192,100	168,000	136,633	185,700	162,700	159,166[3]
2011	396,000			180,400			196,000		

[1] Nomenclature is T for troll, N for net, and S for sport.

[2] Updated with data from 1995 to 2009.

[3] A SBM troll accounting period is from October 1 to September 30.

[4] The lower value resulted from subtracting a skipped retained exclusion catch for the Yakutat Area in 2004. Catch accounting for once-been-defined in the Transboundary Agreement.

Table 6-3 shows the differences between the preseason allowable catches and the observed treaty catches in A SBM fisheries for 1999–2011, and the cumulative deviation for those years. In 2011, SE/AK observed catch was 7.3% higher than the preseason allowable catch, the NBC observed catch was 14.8% lower than the preseason allowable catch, and WCVI observed catch was 2.3% lower than the preseason allowable catch. In SE/AK, observed treaty catches have been below final allowable catches for four of the twelve years, the cumulative deviation is a 1.6% overage. In NBC, observed catches have been below the final allowable catches in nine of the twelve years, the cumulative deviation is a 23.3% underage. In WCVI, observed catches have been below allowable catches in five of the twelve years, the cumulative deviation is a 7.8% underage.

Table 0-3 Deviations in numbers of Chinook salmon and percentages from allowable catches derived from the postseason AI (Table 1-2) for Pacific Salmon Treaty AABM fisheries in 1999 to 2010.

Year	SEAK		NBC[1]		WCVI	
	Number of Fish	Percent Difference	Number of Fish	Percent Difference	Number of Fish	Percent Difference
1999	18,662	+7.9%	-30,975	-80.4%	-68,860	-64.0%
2000	7,905	+4.5%	-60,452	-78.1%	2,817	+2.8%
2001	-63,580	-29.5%	-119,149	-72.5%	-25,196	-17.5%
2002	-18,767	-4.0%	-87,679	-36.9%	-38,914	-19.8%
2003	-59,648	-13.5%	-87,038	-50.0%	-69,339	-35.5%
2004	-1,281 5,366[2]	-0.3% +0.8%	-25,698	-8.9%	5,652	+2.7%
2005	5,070	+0.8%	2,906	+1.2%	19,779	+11.0%
2006	7,902	+2.2%	13,985	+8.0%	-15	-0.0%
2007	69,368	+26.7%	1,215	+0.9%	18,718	+15.8%
2008	20,240	+13.2%	-25,255	-20.9%	8,826	+6.4%
2009	54,401	+30.9%	-29,630	-21.5%	33,317	+36.9%
2010	15,751	+7.5%	-25,787	-14.8%	-3,255	-2.3%
Cum	54,866 99,113	+1.6% +1.7%	-510,529	-23.3%	-142,872	-7.8%

[1] 1999-2004 from DFO (2005).

[2] The lower value resulted from subtracting a disputed terminal exclusion catch for the Stikine River in 2004. Catch accounting has since been defined in the Transboundary Agreement.

ISBM Indices

For ISBM fisheries, the 2008 Agreement specifies that Canada and the United States reduce base period exploitation rates on specified stocks by 36.5% and 40%, equivalent to ISBM indices of 63.5% and 60%, respectively. This requirement is contained in Chapter 3 section 8(c) of the Agreement and is referred to as the 'general obligation' and does not apply to stock groups that achieve their CTC agreed escapement goals. The Agreement specifies that the ISBM indices be forecasted preseason and evaluated postseason for each escapement indicator stock listed in Attachments I to V of the Chinook Chapter. Postseason ISBM indices were computed for 2009 using CWT data and preseason ISBM indices were computed for 2011 using the Chinook salmon model.

Postseason ISBM Indices for 2009

Canadian postseason ISBM indices computed were reduced more than required under the Agreement for the 7 indices calculated (Table 0-4).

Seven of the 16 U.S. postseason ISBM indices computed were reduced more than required. The other 9 U.S. postseason ISBM indices exceeded 0.60, but these stocks met or exceeded their respective escapement goals, and thus are exempted from the general obligation (Table 0-5).

Preseason ISBM Indices for 2011

Eight of the 19 Canadian preseason ISBM indices, based on outputs from calibration 1106, are predicted to exceed the allowable ISBM index of 0.635 in 2011 (Table 0-4). Seven of these 8 stocks are Puget Sound Natural Summer/Fall stocks, and do not have CTC-accepted escapement goals.

Nine of the 23 U.S. ISBM indices based on calibration 1106 are predicted to exceed the allowable limit of 0.60 for U.S. ISBM fisheries in 2011 (Table 0-5). All but Skagit (which has exploitation rate objectives) have CTC agreed escapement goals: Hoh, Quillayute, Upriver Brights, Deschutes, Mid-Columbia Summers, Nehalem, Siletz, and Siuslaw. Of the stocks with goals, all but Nehalem were above their goals in 2010.

Table 0-4. Canadian 2009 ISBM indices based on CWT and the 2011 indices predicted from the PSC Chinook Model.

		Canadian ISBM Indices	
Stock Group	Escapement Indicator Stock	CWT Indices for 2009	Model Indices for 2011
Lower Strait of Georgia	Cowichan Nanaimo	0.400 [4] NA [1,5]	0.367 [6]
Fraser Late	Harrison River [2]	0.058 [7]	0.193
North Puget Sound Natural Springs	Nooksack Skagit	0.106 NA	0.732 0.731
Upper Strait of Georgia	Klinaklini, Kakweiken, Wakeman, Kingcome, Nimpkish	0.247	0.578
Fraser Early (spring and summers)	Upper Fraser, Mid Fraser, Thompson	NA	0.222
West Coast Vancouver Island Falls	WCVI (Artlish, Burman, Kaouk, Tahsis, Tashish, Marble)	0.464 [8]	0.491
Puget Sound Natural Summer / Falls	Skagit Stillaguamish Snohomish Lake Washington Green River	NA 0.252 NA NA 0.208	0.745 0.793 0.744 0.752 [9] 0.756 [9]
North / Central B. C.	Yakoun, Nass, Skeena, Area 8	NA	0.598
Washington Coastal Fall Naturals [3]	Hoko, Grays Harbor, Queets [2], Hoh [2], Quillayute [2]	NA	0.332
Columbia River Falls [3]	Upriver Brights [2] Deschutes Lewis [2]	NA NA NA	0.620 0.620 0.994
Columbia R Summers [3]	Mid-Columbia Summers [2]	NA	0.359
Far North Migrating OR Coastal Falls [3]	Nehalem [2], Siletz [2], Siuslaw [2]	NA	0.529

[1] No. available (NA) because of insufficient data (lack of stock specific tag codes, base period CWT recoveries, etc).
[2] Stock or stock group with a CTC agreed escapement goal.
[3] Stock group listed in Annex 4, Chapter 3, Attachment V.
[4] An inconsistency was discovered between the approaches used to calculate the model-based and CWT-based indices. The former included harvest rates for terminal sport while the latter did not. Terminal sport harvest rates are now included in the calculation of both indices. Further review is yet required to determine whether the base period terminal sport harvest rates obtained from analyses of Big Qualicum CWT recoveries adequately represent impacts that would have occurred on Cowichan Chinook salmon.
[5] Several problems have been identified in the approach previously used to calculate the CWT-based indices for Nanaimo Chinook salmon. Until these problems are resolved, indices for this stock will not be reported.
[6] Although model-based indices were previously calculated separately for Cowichan and Nanaimo, these did not adequately represent impacts on either LGS stock because the model-based data represent an aggregate of the two stocks and methods do not currently exist to correctly disaggregate these data for calculation of the ISBM values. Until such methods are developed, a single index value only will be reported representing the aggregate.
[7] The terminal sport harvest rates for Chilliwack Hatchery Chinook salmon, the indicator stock, were removed from the calculation for the Harrison River naturals because sport harvest has been essentially zero on the natural population.
[8] An inconsistency was discovered between the approaches used to calculate the model-based and CWT-based indices. The former included harvest rates for terminal sport while the latter did not. Terminal sport harvest rates are now included in the calculation of both indices. A more extended review of the indices for WCVI Chinook

salmon will be carried out to determine whether they adequately represent impacts on the WCVI wild aggregate.
[9] For Canadian ISBM fisheries, Lake Washington and Green the same distribution and Index value are assumed.

Table 0-5. U.S. 2009 ISBM indices based on CWT and the 2011 indices predicted from the PSC Chinook Model.

		U.S. ISBM Indices	
Stock Group	Escapement Indicator Stock	CWT Indices for 2009	Model Indices for 2011
Washington Coastal Fall Naturals	Hoko	NA [1]	0.419
	Grays Harbor	0.700	0.549
	Queets [4]	0.450	0.327
	Hoh [4]	1.220	0.760
	Quillayute [4]	1.970	1.058
Columbia River Falls	Upriver Brights [4]	2.790	0.841
	Deschutes [4]	2.360	1.044
	Lewis [4]	0.140	0.426
Puget Sound Natural Summer / Falls	Skagit	NA	0.789
	Stillaguamish	0.200	0.169
	Snohomish	NA	0.211
	Lake Washington	NA	0.387
	Green R.	0.290	0.236
Fraser Late	Harrison River [4]	0.150 [5]	0.497
Columbia R Summers	Mid-Columbia Summers [4]	1.310	1.398
Far North Migrating OR Coastal Falls	Nehalem [4]	0.590	2.146
	Siletz [4]	0.730	0.643
	Siuslaw [4]	1.070	1.427
North Puget Sound Natural Springs	Nooksack	0.520	0.484
	Skagit	NA	0.271
Lower Strait of Georgia [3]	Cowichan,	5.140	0.367
	Nanaimo	NA	NA
Upper Strait of Georgia [3]	Klinaklini, Kakweikan, Wakeman, Kingcome, Nimpkish	NA	NC [2]
Fraser Early (spring and summers) [3]	Upper Fraser, Mid Fraser, Thompson	NA	0.239
West Coast Vancouver Island Falls [3]	WCVI (Artlish, Burman, Kaouk, Tahsis, Tashish, Marble)	NA	0.378
North / Central B. C. [3]	Yakoun, Nass, Skeena, Area 8	NA	NC

[1] Not available (NA) because of insufficient data (lack of stock specific tag codes, base period CWT recoveries, etc).
[2] NC means that the current model assumes the stock is not caught in U.S. ISBM fisheries.
[3] Stock group listed in Annex 4, Chapter 3, Attachment IV.
[4] Stock with a CTC agreed escapement goal.
[5] The US CWT based indices for Fraser Late from 2005 onward do not accurately reflect the impacts on the natural stock because a considerable proportion of the recoveries in the US fisheries have occurred in mark-selective fisheries in which only clipped hatchery-origin fish are retained. The US indices since 2005 indicate greater impacts than would have occurred on the natural stocks and are no longer being reported.

ANNUAL REPORT OF CATCH AND ESCAPEMENT FOR 2011.
TCCHINOOK (12)-3 – June 2012.

The June 30, 1999 Pacific Salmon Treaty (PST) Annex and the Related Agreement (Agreement) substantially changed the objectives and structure of the Pacific Salmon Commission's (PSC) Chinook salmon fisheries and assessment of Chinook salmon stocks. The 1999 Agreement replaced the previous ceiling and pass-through fisheries with Aggregate Abundance Based Management (AABM) and Individual Stock Based Management (ISBM) fisheries. The 2008 Agreement updated

and refined several aspects of the 1999 Agreement while continuing with the approach of abundance based management of PSC Chinook salmon fisheries.

This report summarizes the 2011 fishery catches by region, provides available estimates of incidental mortality (IM) by fishery, and provides limited commentary on fishery catches where needed. Landed catch (LC) is reported in the appendices for each geographic area covered under the PST. A summary of estimates of LC, IM, and total mortality (TM) in nominal fish for all PSC AABM and ISBM fisheries is also provided.

This report also includes an assessment of escapement for stocks with Chinook Technical Committee (CTC) accepted goals, and escapement data through 2011 for all PST indicator stocks. The escapements of 50 naturally spawning escapement indicator stocks are reviewed annually, along with the results from the Sentinel Stocks Program (SSP). Biologically-based escapement goals have been accepted by the CTC for 25 of the 50 escapement indicator stocks/stock aggregates. For 12 of these, the escapement goal is defined as a range; for the remaining 13, the escapement goal is the point estimate of S_{MSY} (escapement producing maximum sustained yield). In 2011, the percentage of stocks meeting goal or goal ranges was 80%, the same rate as in 2010. Of the five stocks below goal, two stocks (Blossom and Hoh Spring/Summer) were within 15% of the target goal. Three stocks were more than 15% below goal: Situk, Cowichan, and Queets Spring/Summer. Data for stocks without accepted goals are presented to illustrate trends in escapement. The CTC will continue to review escapement goals, as they are provided to the committee.

The CTC retrospectively evaluated the performance of the stock groups and the criteria for initiating additional management action in regards to Paragraph 13c, based upon observed escapements and exploitation rates through 2011 and stock forecasts for 2012. No stock groups listed in Attachment I-III met the criteria for triggering additional management action. However, only five of the 10 different stock groups in Attachments I-III have stocks with agreed management objectives that can be evaluated for triggering additional management action, and nine of these stocks had forecasts available for 2012. The CTC has identified a need to develop management objectives and forecast capabilities for more of the stocks and stock groups included in Attachments I-III to improve the efficacy of Paragraph 13.

2012 EXPOITATION RATE ANALYSIS AND MODEL CALIBRATION
TCCHINOOK (12)-4 – December 2012.

This report contains the results of the annual exploitation rate assessment of CWT data through 2010 and the preseason Chinook model calibration for 2012 (CLB 1209). Results include the AIs for the AABM fisheries and ISBM indices for each country.

AABM Abundance Indices and Associated Catches

The pre- and postseason AIs for the three AABM fisheries, SEAK, NBC, and WCVI are presented in Table 1. The Agreement specifies that the AABM fisheries are to be managed through the use of the AIs. Each calibration provides the postseason AIs for the previous year and the preseason AIs for the current year. Preseason AIs are used to set total allowable catch limits in the upcoming fishing season. Subsequently, AIs and associated allowable catches from the first postseason model calibration for a fishing year are used to track catch overages and underages, per PST subparagraph 11(a)(i).

Table 1 Abundance Indices for 1999 to 2012 for the SEAK, NBC, and WCVI AABM fisheries. Postseason values for each year are from the first postseason calibration following the fishing year.

	SEAK		NBC		WCVI	
Year	Preseason	Postseason	Preseason	Postseason	Preseason	Postseason
1999	1.15	1.12	1.12	0.97	0.60	0.50
2000	1.14	1.10	1.00	0.95	0.54	0.47
2001	1.14	1.29	1.02	1.22	0.66	0.68
2002	1.74	1.82	1.45	1.63	0.95	0.92
2003	1.79	2.17	1.48	1.90	0.85	1.10
2004	1.88	2.06	1.67	1.83	0.90	0.98
2005	2.05	1.90	1.69	1.65	0.88	0.84
2006	1.69	1.73	1.53	1.50	0.75	0.68
2007	1.60	1.34	1.35	1.10	0.67	0.57
2008	1.07	1.01	0.96	0.93	0.76	0.64
2009	1.33	1.20	1.10	1.07	0.72	0.61
2010	1.35	1.31	1.17	1.23	0.96	0.95
2011	1.69	1.62	1.38	1.41	1.15	0.90
2012	1.52		1.32		0.89	

The 2008 Agreement specifies an allowable catch for each AI for each fishery. The maximum allowable treaty catch (total catch minus any hatchery add-on and exclusion catch) by fishery and year and the observed treaty catches are shown in Table 2.

Table 2 Preseason allowable catches for 1999 to 2012, and postseason allowable catches and observed catches for 1999 to 2010, for AABM fisheries. Postseason values for each year are from the first postseason calibration following the fishing year.

PST Treaty Allowable and Observed Catches									
Year	SEAK (T, N, S) [1]			NBC (T, S)			WCVI (T, S)		
	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch
1999	192,800	184,200	198,842	145,600	126,100	86,726	128,300	107,000	36,413
2000	189,900	178,500	186,493	130,000	123,500	31,900	115,500	86,200	101,438
2001	189,900	250,300	186,919	132,600	158,900	43,500	141,200	145,500	117,670
2002	356,500	371,900	357,133	192,700	237,800	150,137	203,200	196,800	165,036
2003	366,100	439,600	379,519	197,100	277,200	191,657	181,800	268,900	175,821
2004	383,500	418,300	417,019 421,666 [2]	243,600	267,000	241,508	192,500	209,600	216,624
2005	416,400	387,400	391,999	246,600	240,700	243,606	188,200	179,700	202,662
2006	346,800	354,500	362,948	223,200	200,000	215,985	160,400	145,500	146,883
2007	329,400	259,200	329,804	178,000	143,000	144,235	143,300	121,900	139,150
2008	170,000	152,900	173,382	124,800	120,900	95,647	162,600	136,900	145,726
2009[3]	218,800	176,000	230,647	143,000	139,100	109,470	107,800	91,300	124,617
2010	221,800	215,800	231,591	152,100	160,400	136,613	143,700	142,300	139,047
2011	294,800	283,300	290,715	182,400	186,800	122,660	196,800	134,800	204,232
2012	266,800			173,600			133,300		

[1] Nomenclature is T for troll, N for net, and S for sport.
[2] The lower value resulted from subtracting a disputed terminal exclusion catch for the Stikine River in 2004. Catch accounting has since been defined in the Transboundary Agreement.
[3]This is the first catch year in which fisheries operated under the provisions of the 2009 agreement.

Table 0-3 3 shows the differences between the postseason allowable catches and the observed treaty catches in AABM fisheries for 1999–2011, and the cumulative deviation for those years. In 2011, SEAK observed catch was 2.6% higher than the postseason allowable catch; the NBC observed catch was 34.3% lower than the postseason allowable catch; and WCVI observed catch was 51.5% higher than the postseason allowable catch. In SEAK, observed treaty catches have been below final allowable catches for four of the thirteen years; the cumulative deviation is a 1.8% overage. In NBC, observed catches have been below the final allowable catches in ten of the thirteen years; the cumulative deviation is a 23.8% underage. In WCVI, observed catches have been below allowable catches in five of the thirteen years; the cumulative deviation is a 2.6% underage.

Overages and underages in AABM catches, relative to the first postseason calibration for a fishing year (Table), can arise due to the in-season management system, errors in the preseason calibration process (e.g., forecast error), or a combination of the two. The relative influence of

each was evaluated by inspecting differences in actual landed catch and allowable catches from both preseason and postseason calibrations (Table 4). In 2011, regarding the in-season management system, the actual landed catch was less than the preseason allowable catch by 4,085 Chinook salmon in SEAK and by 59,740 in NBC. For WCVI, the actual landed catch was 7,432 more than the preseason allowable catch. In terms of the postseason allowable catches for evaluation of the provisions of the PST (subparagraph 11(a)(i)), actual catches exceeded the postseason allowable catches by 7,415 Chinook salmon in SEAK and by 69,140 in WCVI. Actual landed catch in NBC was 64,140 fish less than the postseason allowable catch.

Table 3 Deviations in numbers of Chinook salmon caught and percentages from allowable catches derived from the postseason AI (Table 2) for Pacific Salmon Treaty AABM fisheries in 1999 to 2011. Postseason values for each year are from the first postseason calibration following the fishing year.

Year	SEAK		NBC		WCVI	
	Number of Fish	Percent Difference	Number of Fish	Percent Difference	Number of Fish	Percent Difference
1999	14,642	7.9%	-39,374	-31.2%	-70,587	-66.0%
2000	7,993	4.5%	-91,600	-74.2%	15,238	17.7%
2001	-63,381	-25.3%	-115,400	-72.6%	-27,830	-19.1%
2002	-14,767	-4.0%	-87,663	-36.9%	-31,764	-16.1%
2003	-60,081	-13.7%	-85,543	-30.9%	-93,079	-34.6%
2004	-1,281 3,366	-0.3% 0.8%[1]	-25,492	-9.5%	7,024	3.4%
2005	4,599	1.2%	2,906	1.2%	22,962	12.8%
2006	8,448	2.4%	15,985	8.0%	1,383	1.0%
2007	70,604	27.2%	1,235	0.9%	17,250	14.2%
2008	20,482	13.4%	-25,253	-20.9%	8,826	6.4%
2009[2]	54,647	31.0%	-29,630	-21.3%	33,317	36.5%
2010	15,791	7.3%	-23,787	-14.8%	-3,253	-2.3%
2011	7,415	2.6%	-64,140	-34.3%	69,432	51.5%
Cum.	65,110 69,758	1.8% 1.9%[1]	-567,756	-23.8%	-51,081	-2.6%

[1] The lower value resulted from subtracting a disputed terminal exclusion catch for the Stikine River in 2004. Catch accounting has since been defined in the Transboundary Agreement.

[2] This is the first catch year in which fisheries operated under the provisions of the 2009 agreement; cumulative deviations span the entire record that is displayed.

Table 4 Deviations in actual landed catch (LC), allowable landed catch determined from preseason model calibration (PreALC), and allowable landed catch determined from postseason model calibration (PostALC) for AABM fisheries from 1999 to 2011. Postseason values for each year are from the first postseason calibration following the fishing year. The difference between LC and PreALC represents the consequences of the management system employed in the year. The difference between PreALC and PostALC represents consequences of the forecast procedures and data used in forecasting the PreALC by the PSC Chinook Model. The difference between LC and PostALC represents the combined effects of both processes.

Year	SEAK			NBC			WCVI		
	LC-PreALC	PreALC-PostALC	LC-PostALC	LC-PreALC	PreALC-PostALC	LC-PostALC	LC-PreALC	PreALC-PostALC	LC-PostALC
1999	6,042	8,600	14,642	-70,473	19,500	-50,973	-89,760	21,300	-68,460
2000	-1,807	11,400	7,993	-97,952	6,500	-91,452	-26,881	29,300	2,417
2001	-2,981	-60,400	-63,381	-88,849	-26,300	-115,149	-20,896	-4,300	-25,196
2002	633	-15,400	-14,767	-42,579	-45,100	-87,679	-45,314	6,400	-38,914
2003	13,429	-73,500	-60,081	-2,938	-80,100	-83,038	-8,239	-87,100	-95,339
2004	33,519 38,166	-34,600 -34,600	-1,281 3,566[1]	-294	-23,400	-23,694	22,792	-47,100	5,692
2005	-24,401	29,600	4,999	-2,994	5,900	2,906	11,279	8,500	19,779
2006	16,148	-7,700	8,448	-7,219	21,200	13,981	-14,919	14,900	-19
2007	494	70,200	70,694	-13,769	19,000	5,231	-2,686	21,400	18,714
2008[2]	1,582	17,100	20,482	-29,153	1,900	-25,253	-16,874	25,700	8,826
2009	11,847	42,800	54,647	-14,150	4,700	-29,450	16,817	16,500	33,317
2010	9,791	6,000	15,791	-15,487	-8,300	-23,787	-4,651	1,400	-3,251
2011	-4,085	11,500	7,415	-59,740	-4,400	-64,140	7,432	62,000	69,432

[1] The lower value resulted from subtracting a disputed terminal exclusion catch for the Nakina River in 2004. Catch accounting has since been defined in the Transboundary Agreement.

[2] This is the first catch year in which fisheries operated under the provisions of the 2009 agreement.

ISBM Indices

For ISBM fisheries, the 2008 Agreement specifies that Canada and the United States reduce base period exploitation rates on specified stocks by 36.5% and 40%, equivalent to ISBM indices of 63.5% and 60%, respectively. This requirement is contained in Chapter 3 section 8(a) of the Agreement and is referred to as the 'general obligation' and does not apply to stock groups that achieve their CTC agreed escapement goals. The Agreement specifies that the ISBM indices be forecasted preseason and evaluated postseason for each escapement indicator stock listed in Attachments I to V of the Chinook Chapter. Postseason ISBM indices were computed for 2010 using CWT data and preseason ISBM indices were computed for 2012 using the Chinook model.

Postseason ISBM Indices for 2010

Canadian postseason ISBM indices indicated ISBM exploitation rates were reduced more than required under the Agreement for the 7 stocks for which the indices were computed (Table 5).

Five of the 16 U.S. preseason ISBM indices compared were reduced more than required. The other 11 U.S. preseason ISBM indices exceeded 0.60, but these stocks met or exceeded their CTC-accepted escapement goals, and thus are exempted from the general obligation (Table 6).

Preseason ISBM Indices for 2012

Seven of the 19 Canadian preseason ISBM indices, based on outputs from calibration 1209, are predicted to exceed the allowable ISBM index of 0.635 in 2012 (Table 5). Five of these seven stocks are Puget Sound Natural Summer/Fall stocks that do not have CTC-accepted escapement goals.

Of the 23 U.S. ISBM indices calculated from calibration 1209, ten are predicted to exceed the allowable limit of 0.60 for U.S. ISBM fisheries in 2012 (Table 6). All but Grays Harbor, Green River, and Stillaguamish (which has exploitation rate objectives) have CTC agreed escapement goals. Quillayute, Upriver Brights, Deschutes, Mid-Columbia Summers, Nehalem, Siletz, and Siuslaw. Of the stocks with goals, all were above their goals in 2011.

Table 7 [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[redacted]

Implementation of Coho Abundance-Based Management discusses other assumptions that are critical to interpretation of report content.

5. JOINT NORTHERN BOUNDARY TECHNICAL COMMITTEE

No reports were finalized for publication during this reporting period.

6. JOINT TRANSBOUNDARY TECHNICAL COMMITTEE

6.1 PACIFIC SALMON AGREEMENT AND ENHANCEMENT PLANS FOR THE STIKINE, TAKU AND ALSEK RIVERS, 2012.
TCTR (12)-1 – May 2012.

Management of transboundary river salmon to achieve conservation, allocation and enhancement objectives as stipulated by the Pacific Salmon Treaty (PST) requires a co-operative approach by Canada and the United States. It is important that both Parties have a clear understanding of the objectives and agree upon procedures to be used in managing the fisheries, including the criteria upon which modifications of fishing patterns will be based. This document is intended to facilitate co-operative salmon management, stock assessment, research and enhancement on transboundary stocks of the Stikine, Taku, and Alsek rivers conducted by the Canadian Department of Fisheries and Oceans (DFO), the Tahltan and Iskut First Nations (TIFN), the Taku River Tlingit First Nation (TRTFN), the Champagne & Aishihik First Nation (CAFN) and the Alaska Department of Fish and Game (ADF&G).

The report contains, by river system and species, the 2012 salmon run outlooks, spawning escapement goals, a summary of harvest sharing objectives, and an outline of management procedures to be used during the conduct of the 2012 fisheries. Numerical forecasts are presented for Stikine sockeye and Chinook and Taku Chinook, which are required by the PST. Taku sockeye and coho, and Alsek sockeye and Chinook salmon. Outlooks for other stocks are given qualitatively with reference to brood year escapement data where available. The report also contains joint plans for fry plants and egg collections and a detailed list of proposed field projects for 2012, identifying agency responsibility and contacts for the various functions within the projects.

6.2 ESTIMATES OF TRANSBOUNDARY RIVER SALMON PRODUCTION, HARVEST AND ESCAPEMENT AND A REVIEW OF JOINT ENHANCEMENT ACTIVITIES IN 2008.
TCTR (12)-2 – June 2012.

Estimates of harvests and escapements of Pacific salmon returning to the transboundary Stikine, Taku, and Alsek Rivers for 2008 are presented and compared with historical patterns. Averages, unless stated differently, refers to the 1998-2007 average. Relevant information pertaining to the management of appropriate U.S. and Canadian fisheries is presented and the use of inseason management models is discussed. Results from transboundary river sockeye salmon (*Oncorhynchus nerka*) enhancement projects are also reviewed.

Stikine River

The 2008 Stikine River sockeye salmon run was estimated to be 120,200 fish, of which approximately 62,700 fish were harvested in various fisheries including test fisheries. An estimated 39,600 Stikine River fish escaped to spawn, including 10,000 fish that migrated to the Tuya River block that were not harvested. The run and harvest were below average. The Tahltan Lake sockeye salmon escapement of 10,500 was below the goal range (18,000 to 30,000 fish). The estimated U.S. commercial catch of Stikine

River sockeye salmon in Districts 106 and 108, including the Stikine River subsistence fishery, was 45,900 fish. The Canadian inriver commercial and aboriginal fishery catch was 35,600. The inriver test fishery harvested 1,100 sockeye salmon and there was no marine test fishery in 2008. Weekly inseason run projections from the Stikine Management Model (SMM) ranged from 169,000 to 236,000 sockeye salmon. Weekly inseason run projections using other methods ranged from 125,000 to 163,000 sockeye salmon. The final inseason model prediction was 170,000 fish, with a total allowable catch (TAC) of 101,000 fish. The final inseason run size based on other methods was 125,000 with a TAC of 52,000 fish. Based on the postseason run size estimates and TAC calculations of 42,400 Stikine River fish for each country, Canada harvested 193% and the U.S. harvested 240% of their respective TACs. Broodstock collection and otolith sampling removed 2,400 and 100 sockeye salmon respectively from the escapement to Tahltan Lake leaving a spawning escapement of 8,000 fish. The estimated spawning escapement of 16,800 mainstem Stikine River sockeye salmon was below the goal range of 20,000 to 40,000 fish for this stock group.

The 2008 Stikine River Chinook salmon (non large salmon) run is estimated at 36,000 fish, of which approximately 17,600 fish were harvested in various fisheries. An estimated 18,400 Stikine River fish escaped to spawn, above the escapement goal of 17,400 large Chinook salmon. The run and harvest were below the average. The Little Tahltan River Chinook salmon escapement of 2,700 fish was below the 2008 escapement goal of 3,300 fish but bordered the goal range of 2,700 to 5,300 fish. The estimated U.S. commercial catch of Stikine River Chinook salmon in Districts 106 and 108 gillnet, troll, subsistence, and sport fisheries was 9,700 fish. The Canadian commercial, aboriginal, and sport fisheries catch was 8,000 fish. There were no inriver or marine test fisheries for Chinook salmon in 2008, however, 13 large Chinook salmon were harvested inriver sockeye salmon test fisheries. Managers used both the m-r and model estimates to generate inseason estimates after week 22. The inseason run projections were persistent throughout the course of the fishery in predicting a total run size that was less than the preseason forecast of 46,000 fish. Weekly inseason run projections from the model ranged from 38000 to 45,000 Chinook salmon. The final estimate was 35,700 large Chinook salmon (both U.S. and Canada), with a total allowable catch (TAC) of 17,000 fish. The US harvested approximately 117% of their TAC, while Canada harvested approximately 91% of their TAC.

The 2008 run size of Stikine River coho salmon cannot be quantified. The U.S. marine harvest of Stikine River coho salmon is also unknown since there is no stock identification program for this species. Mixed stock coho salmon harvest in Districts 106 and 108 were 116,000 and 34,000 fish, respectively. Alaskan hatchery fish comprised approximately 42% of the coho salmon harvest from the two districts. The aerial survey count of 1,100 fish from four index sites combined was below average. The cumulative CPUE observed in the coho salmon test fishery, however, was slight above average.

Taku River

The estimated 2008 Taku River sockeye salmon run is 163,300 fish, including an estimated catch of 95,200 fish and an above-border spawning escapement of 68,100 sockeye salmon. Because a normal test fishery was not conducted during weeks 34-42 for second event sampling, the above border sockeye salmon contribution for this time period was estimated from Canyon Island fish wheel CPUE data. The run size was below average, but the escapement was close to the goal range of 71,000 to 80,000 fish. An estimated 74,700 Taku River sockeye salmon were harvested in the District 111 commercial fishery, below average, and an estimated 1,000 sockeye salmon were harvested in the U.S. inriver personal use fishery. The Canadian inriver commercial and aboriginal fishery harvest included 19,300 and 200 sockeye salmon, respectively, and were both below average. The U.S. harvested an estimated 86% of the total TAC and Canada harvested an estimated 22% of the TAC.

The harvest of large Chinook salmon in the Canadian commercial fishery in the Taku River was 2,300 fish, including 1,400 fish harvested in the stock assessment fishery (weeks 18-24). Preseason and then

inseason estimates of Chinook salmon abundance did not allow for a directed Chinook salmon fishery this season. The Canadian aboriginal fishery in the Taku River harvested 1 large Chinook salmon which is below average. The recreational fishery harvested approximately 105 large fish. District 111 mixed stock gillnet fishery harvest of 1,700 large Chinook salmon was also below average. Approximately 42% of the harvest was estimated to be of Alaska hatchery origin. The above border spawning escapement estimated from the mark-recapture program is 27,400 fish.

The estimated above border run of Taku River coho salmon in 2008 is 99,200 fish, which is below average. The Canadian inriver commercial and test fishery harvest included 3,800 coho salmon; below average. After upriver Canadian harvest and test fishery catches are subtracted from the inriver run, the above-border-spawning escapement is estimated at 95,400 coho salmon, which exceeds the minimum escapement goal of 38,000 fish. The U.S. harvest of 37,300 coho salmon in the District 111 mixed stock fishery was above average. Alaskan hatcheries contributed an estimated 7% of the District 111 harvest.

The harvest of 90,200 pink salmon in District 111 was below average. No pink salmon were reported retained in the Canadian commercial inriver fishery in 2008. Although spawning escapement is not know the Canyon Island fish wheel catch of 4,700 fish was below average.

The harvest of 768,700 summer run chum salmon in the District 111 fishery was a record while the harvest of 5,400 fall run fish was above average. There was non-retention of chum salmon in the Canadian inriver fishery in 2008. Although spawning escapement is not known the Canyon Island fish wheel catch of 350 chum salmon was above average.

Alsek River

The Alsek River sockeye salmon harvest of 2,800 fish in the U.S. commercial fishery was the lowest on record. The Canadian inriver harvest was zero sockeye salmon for Klukshu River and catches are not reported for Village Creek. The Klukshu River weir count of 2,700 sockeye salmon was the lowest on record and below the goal range of 7,500 to 15,000 fish. The count of 43 early run sockeye salmon (count through August 15) was also a record low. The late run count of 2,700 was the second lowest on record.

The Chinook salmon run to the Alsek River was below average. The U.S. Dry Bay catch of 130 large Chinook salmon was below average. The Canadian recreational fishery catch of 7 fish is below average and the aboriginal fishery catch was 0. The 470 Chinook salmon counted through the Klukshu River weir was also the lowest on record and below the goal range of 1,100 to 2,300 Chinook salmon.

Current stock assessment programs prevent an accurate comparison of the Alsek River coho salmon run with historical runs. The U.S. Dry Bay catch of 2,700 coho salmon was below average. The operation of the Klukshu weir does not provide a complete enumeration of coho salmon into this system since it is removed before the run wais over; however, it does provide an annual index. The count of 4,300 coho salmon was above average.

Enhancement

Eggs and milt were collected from the year 2008 sockeye salmon escapements at Tahltan, Tatsamenie and Little Trapper lakes. A total of 3.4 million eggs were collected at Tahltan Lake, 4.9 million at Tatsamenie Lake and 0.1 million at Trapper Lake (the Trapper eggs were planted in Tunjony Creek).

Outplants of 2007 brood-year sockeye salmon fry in May and June 2008 included, 1.4 million fry into Tahltan Lake, 0.8 million fry into Tuya Lake, 3.9 million fry into Tatsamenie Lake and 0.4 million fry into Trapper Lake. Green-egg to planted-fry survivals were 70%, 83%, 89% and 39% for the Tahltan, Tuya, Tatsamenie and Trapper outplants, respectively. Survival to emergence was below average this year

primarily due to loss of eggs and fry to the IHN virus; however there was some reduced survival due to egg shipment delays due to weather.

The egg incubation and thermal-marking program was continued at Snettisham Hatchery in 2008. Snettisham hatchery is operated by DIPAC (Douglas Island Pink and Chum, Inc.), a private aquaculture organization in Juneau. A co-operative agreement between ADFG and DIPAC provides for Snettisham hatchery to serve the needs of the joint TBR enhancement projects.

Adult sockeye salmon otoliths were processed inseason by the ADFG otolith lab to estimate the weekly contribution of fish from US/Canada TBR fry planting programs to the District 106, 108, and 111 gillnet fisheries and to Canadian commercial fisheries in the Stikine and Taku Rivers. Contribution estimates of planted fish to Alaskan harvest were 26,000 planted Stikine River fish to District 106 and 108, and 11,800 planted Taku River fish to District 111. Estimates of contributions to Canadian fisheries included 21,000 planted fish to Stikine River fisheries and 1,900 planted fish to the Taku River fisheries.

F. JOINT TECHNICAL COMMITTEE ON DATA SHARING

No reports were finalized for publication during this reporting period.

G. JOINT SELECTIVE FISHERY EVALUATION COMMITTEE

SUMMARY OF MASS MARKING ACTIVITIES AND MARK SELECTIVE FISHERIES CONDUCTED BY CANADA AND THE UNITED STATES, 2005-2009. SFEC (12)-1 – April 2012.

This report provides information on mass marking (MM) of hatchery Coho Salmon (*Oncorhynchus kisutch*) and Chinook Salmon (*O. tshawytscha*), coded-wire tag (CWT) sampling programs, and mark-selective fisheries (MSFs) conducted during 2005-2009. The information includes numbers of mass-marked fish released, double index tagging, electronic tag detection (ETD) capabilities, and implementation of MSFs. The geographical areas covered include Alaska, British Columbia (BC), Washington, Oregon, and Idaho.

Mass Marking (MM) and Double Index Tagging

Mass marking varies by species and location throughout the Pacific Northwest. There was no MM of Coho in Alaska, north/central BC, or California from 2005 to 2009. In addition, there was no MM of Chinook in Alaska, Canada, or California in the same time period.

Essentially all hatchery Coho smolt production intended for harvest from southern BC, Washington, and Oregon has been mass-marked or tagged since 2005. Participating facilities extend from the Oregon Coast to the north end of Vancouver Island. The annual release of mass-marked Coho smolts has remained at approximately 35 million throughout the timeframe of this report. Coho fingerling releases and Coho produced for wild stock recovery programs are generally not mass marked.

The level of Chinook MM increased from 66 million in 2005 to 114 million in 2009. This increase was due to initiating MM of fall Chinook stocks from the coast of Washington and the Columbia River. By 2009, most all hatchery Chinook production intended for harvest was mass-marked or tagged in Washington, Oregon, and Idaho. Chinook produced for wild stock recovery programs are generally not mass marked.

Double index tagging of indicator stocks is required for assessing the impacts of MSFs on unmarked wild stocks. A subset of the Coho and Chinook indicator stocks have been double index tagged over the period of this report. However, some double index tag groups were discontinued before and during these years. As the geographical scope of Chinook MSFs expands, additional indicator stocks have been recommended by the Selective Fishery Evaluation Committee (SFEC) to be double index tagged.

Electronic Tag Detection

Electronic tag detection to recover coded-wire tags has not been employed coast wide because of continuing reservations by some agencies regarding the cost, accuracy, and practical feasibility of incorporating this technology into their sampling programs. Alaska Department of Fish and Game, Canadian Department of Fisheries and Oceans, Oregon Department of Fish and Wildlife, and California Department of Fish and Game all conduct visual sampling programs which will not recover the unmarked component of double index tag (DIT) programs required to assess impacts of MSFs.

Coast Wide Coordination of CWT Program

Mass-marking, double index tagging, and CWT sampling programs are not sufficiently coordinated to support analysis by PSC technical committees. It is also not clear if agencies are collecting adequate and necessary data to permit estimation of unmarked CWT recoveries in fisheries and escapements so that cohort reconstructions can be carried out on unmarked double index tag releases (SFEC 2010). With the expansion of Chinook marine fisheries, the geographical range of electronic CWT sampling needs to be expanded and more stocks need to be double index tagged.

Mark-Selective Fisheries

Coho Salmon

There were no directed commercial MSFs in Canadian waters during the years 2005 through 2009. However, retention of marked Coho was permitted in some commercial troll openings off the west coast of Vancouver Island in 2008 and 2009 with Chinook Salmon as the target species. These fisheries took place between the months of October and March. Recreational Coho MSFs were implemented in most of southern BC, including Johnstone Strait, the Strait of Georgia, Juan de Fuca Strait, and the West Coast of Vancouver Island. Non-selective fisheries (NSFs) were implemented mostly in terminal areas where local wild stocks are showing improvement, as well as in northern British Columbia.

In Washington and Oregon, multiple Coho MSFs occurred during the years 2005-2009. These included commercial troll and recreational fisheries in marine waters. In all years, mark-selective commercial non-treaty troll and recreational fisheries for Coho occurred in the marine waters from the United States/Canada Border to Cape Falcon, Oregon during July through September. Recreational Coho MSFs occurred during 2005-2009 in the marine areas of coastal Oregon from mid-June through August. In addition, recreational Coho MSFs occurred in Willapa Bay (Area 2-1) during the July-September period and in Grays Harbor (Area 2-2) during July (2007) and from September 16 through November 30 (years 2007-2009). Also, in 2009, a non-treaty commercial MSF for Coho occurred in Grays Harbor (Area 2C) during the month of September.

Additionally, recreational Coho MSFs occurred in several Washington coastal freshwater systems in 2005-2009. These Coho MSFs occurred in the Quillayute River Basin (February through August), Willapa Bay tributaries (August through January), and Grays Harbor tributaries (September through February).

In Puget Sound, recreational Coho MSFs occurred in four marine areas (Areas 5, 6, 7, and 13) during the months of July through October in years 2005-2009. Recreational Coho MSFs also occurred in several freshwater systems of Puget Sound, including the Nooksack River in northern Puget Sound during the months of September through December (years 2005-2009), Chambers Creek Estuary (July-November,

2006-2008), Kennedy Creek (October-November, 2007-2009), and McLane Creek (September-November, 2007 only).

In the Columbia River, recreational Coho MSFs occurred during years 2005-2009 (generally during the period from August 1 through December 31), including the Buoy 10 and lower river (below Bonneville Dam) recreational fisheries. Recreational Coho MSFs also occurred in some Oregon coastal rivers in years 2005-2009.

Chinook

There were no commercial MSFs for Chinook in Canadian waters during the years 2005 through 2009. However, from March through May in 2008 and 2009, a recreational mixed-bag Chinook MSF occurred in the Canadian marine waters of the Juan de Fuca Strait. In this mixed-bag fishery, retention of both marked and unmarked Chinook Salmon was permitted between the minimum size limit of 45 cm and up to 67 cm in length (measured as the nose-to-fork length), but retention of marked Chinook only was permitted above 67 cm for a total daily limit of two Chinook Salmon.

There were no recreational Chinook MSFs in Washington coastal marine waters during the 2005 through 2009 seasons. However, recreational Chinook MSFs did occur in Washington coastal freshwater systems, such as the Quillayute River (February through August, years 2005-2009) and the Hoh River (May through August, years 2008-2009). Several recreational Chinook MSFs occurred in the marine waters of Puget Sound, Washington in both the summer and winter seasons. Summer recreational Chinook MSFs occurred in Areas 5 and 6 within the Strait of Juan de Fuca (July-August, years 2005-2009), Areas 9 and 10 (July-August, years 2007-2009), Area 11 (June-September, years 2007-2009) and Area 13 (May-September, years 2007-2009). Winter recreational Chinook MSFs occurred in Area 7 (February 2008, February-April 2009, December 2009-April 2010), Areas 8-1 and 8-2 (October-April in years 2005-2006 and 2006-2007; November-April in 2007-2008; January-April in 2009; and November-April in 2009-2010), Area 9 (January-April in 2008 and 2009; November 2009), and Area 10 (December-January 2007-2008 and 2008-2009; October-January 2009-2010). In addition, freshwater Chinook MSFs in rivers surrounding Puget Sound occurred during years 2005-2009 in the Nooksack River (September-December), Skagit River (June-July), Skykomish River (June-July), Puyallup River (August-December), Carbon River (September-November), and the Nisqually River (July-January).

In Oregon, coastal recreational MSFs for spring Chinook Salmon occurred in a limited area adjacent to Tillamook Bay during the months of March through July in years 2005-2009. Additionally, in-stream MSFs for spring Chinook Salmon occurred in the Tillamook Basin (including the Kilchis, Miami, Tillamook, Trask, and Wilson rivers), and Nestucca River and Bay (including Little Nestucca River and Three Rivers) during years 2005-2009. During 2008 and 2009, recreational MSFs for fall Chinook in coastal Oregon waters occurred in the Tillamook Terminal Area (September-November, 2008; September-October, 2009) and the Elk River Terminal Area (November only in 2008; October-November, 2009). No MSFs for fall Chinook occurred in any coastal Oregon streams during 2005-2009.

The only commercial Chinook MSFs occurring in Washington and Oregon during 2005-2009 were implemented in the Columbia River mainstem. The states of Washington and Oregon implemented mark-selective commercial fisheries for spring Chinook using both large-mesh (≥8" mesh) and tangle-net (or tooth-net) gear (≤4.25" mesh). These commercial MSFs occurred downstream of Bonneville Dam during approximately late February through mid/late March (and through late May and mid-June in years 2006 and 2007, respectively).

The states of Washington and Oregon also implemented recreational Chinook MSFs in the Columbia River during 2005-2009. Mark-selective fisheries for spring Chinook occurred in the mainstem from the mouth upstream to McNary Dam (open retention periods varied during the January through mid-June timeframe). Recreational summer Chinook MSFs also occurred during mid-June through July of 2005 in the mainstem Columbia River, upstream of Tongue Point to the Oregon/Washington border above

McNary Dam. In addition, recreational Chinook MSFs occurred in several Columbia River tributaries, including the Willamette River (January-June), the Cowlitz, Kalama, Lewis, and Sandy rivers (January-July), and Snake River (mid-May through June). Terminal recreational Chinook MSFs have occurred in the Snake River Basin of Idaho but are not covered in this document.

As the number of returning mass-marked Chinook increases, an expansion of Chinook MSFs is expected in coastal and Columbia River areas.

Issues and Recommendations

Several issues and recommendations are identified in Section 8 at the end of the report. Marking, tagging, and sampling programs are not adequately coordinated within and between agencies. In addition, reporting of data required to evaluate MSFs is lacking. It is important that agency leaders become aware of the data collection and reporting requirements to the PSC and work with their SFEC representatives to fulfil these obligations.

REVIEW OF 2011 MASS MARKING A ND MARK SELELCTIVE FISHERY PROPOSALS. SFEC (13)-1. – January 2013.

Throughout this report a mass-marked fish refers to a fish from which the adipose fin has been removed. A proportion of the mass-marked fish will also contain an implanted coded-wire tag (CWT). A double-index-tag (DIT) group includes two related CWT groups, one with the adipose fin excised ("marked") and one with the adipose fin intact ("unmarked"). A variety of terms are in use to refer to marked and unmarked fish. In this report, the terms 'marked' and 'unmarked' are used for the most part with occasional use of the terms "clipped" and 'unclipped'.

Summary of 2011 Mass Marking Proposals

Marking Programs

Seventeen proposals (eight for Coho and 10 for Chinook) were received for mass marking (MM) occurring in 2011 (Appendix E). The Selective Fishery Evaluation Committee (SFEC) believes these proposals cover all but one MM program of relevance to the Pacific Salmon Commission (PSC).

Approximately 37 million Coho are proposed to be mass marked coastwide in 2011 (Table 2.1, Figure 2.1A), a level comparable to that proposed in 2010. Essentially all hatchery Coho production intended for harvest, from southern British Columbia (BC) and southern United States (US) hatcheries is now mass marked. Currently there are 19 Coho Salmon DIT groups (Table 2.1), of which the majority is released from Puget Sound (PS) or Washington (WA) coastal facilities. Two of the 19 are released from BC and four from the Columbia River Basin.

Approximately 106 million Chinook are proposed to be mass marked in 2011 from southern US Chinook hatcheries (Table 2.1, Figure 2.1B). This is approximately 4 million less than were proposed for 2010. Most all hatchery Chinook production from southern US hatcheries intended for harvest is now mass marked. Currently there are 15 Chinook Salmon DIT groups (Table 2.1), of which eight are released from PS facilities, two from the coastal facilities, and one spring and four fall stock releases from Columbia River facilities.

Sampling and DIT Programs

Assuming recent exploitation rates and sampling programs, the SFEC estimates the proposed MM of Coho stocks in 2011 will result in annual encounters of untagged marked Coho in sampling programs of approximately 1,400 Coho in Alaska (AK) and 8,000 Coho in Canada (Table 2.4). For southern US Chinook stocks, annual encounters of untagged marked Chinook in sampling programs are projected to be approximately 6,500 Chinook in AK, 22,600 Chinook in Canada, and 1,700 Chinook in California (Table 2.4).

Prior to MM, the adipose fin clip was employed as a visual indicator for fish containing a CWT. Consequently, sampling programs which were designed to collect heads from fish with missing adipose fins resulted in samples of heads, all which contained CWTs. With MM, a large number of marked fish do not contain CWTs; further, CWTs must be recovered from both marked and unmarked fish to obtain data for DIT releases to estimate fishery impacts. Electronic tag detection (ETD) equipment has been developed as a means to efficiently identify marked and unmarked fish containing CWTs. However, ETD is not employed coastwide because of continuing reservations by some agencies regarding the cost, accuracy, and practical feasibility of incorporating this technology into their sampling programs. The Alaska Department of Fish and Game (ADF&G), Canadian Department of Fisheries and Oceans (CDFO), Oregon Department of Fish and Wildlife (ODFW), and California Department of Fish and Game (CDFG) all conduct sampling programs which will not recover the unclipped component of DIT programs required to assess impacts of MSFs.

Considering sampling programs coastwide, some agencies already implement comprehensive electronic sampling strategies to recover CWTs from sport and commercial fisheries, while other agencies are still working to increase use of ETD. Washington State continues to fully implement electronic sampling statewide and consistently reports CWT recoveries of unmarked DIT releases in recreational marine and some freshwater MSFs, as well as in non-selective fisheries (NSFs). Starting in 2008, Canada also committed to full electronic sampling in all commercial fisheries for Chinook and reporting of all DIT CWTs. Coho in all Canadian commercial fisheries have also been electronically sampled with the exception of the Coho landed by the northern BC 'ice boat' fleet. Visual sampling only is used to recover CWTs in that fishery. Canada continues to rely on the Sport Head Recovery Program (SHRP) to recover CWTs from NSFs and MSFs alike and thus, no unmarked DIT recoveries are available from them. ODFW continues to use visual sampling of fall Chinook in the Columbia River and the Oregon (OR) coast fisheries, also resulting in no recoveries of unmarked DIT groups. Fisheries from which unmarked DIT recoveries should have been observed create gaps in analyses of fishery impacts on unmarked (wild) fish.

Encounters of large numbers of mass-marked Chinook are increasingly impacting catch sampling programs in northern fisheries, for example, approximately 30% of the Chinook caught in the south east Alaskan troll fishery with a missing adipose fin do not contain a CWT in recent years. With the MM of Columbia River fall Chinook stocks, the number of mass-marked Chinook encountered in California sampling programs is also estimated to significantly increase in 2011. The increased costs to deal with the additional marked fish (e.g., storage, and shipping to and sorting of heads in the dissection laboratories) are not quantified, but will impact the programs.

Summary of 2011 Mark- Selective Fishery Proposals

Forty-two proposals for MSFs (16 for Coho and 26 for Chinook) were received for fisheries in 2011 (Appendix F). The SFEC believes these proposals cover all MSFs planned for 2011 of relevance to the PSC. The proposals submitted to the SFEC for review are provided in Table 3.1. Further details describing the proposed MSFs and comments by the SFEC are provided in Table 3.2 and Table 3.3.

The majority of MSF proposals are for terminal marine or freshwater areas, each of which will impact mature fish of one to several stocks. Multiple MSFs for both Coho and Chinook are also expected to occur in ocean areas in 2011 in BC, WA (WA ocean areas 1 through 4 and the Columbia River) and OR. These fisheries will impact many stocks and also multiple broods of Chinook. Table 2.4 provides estimates of projected encounters of mass-marked fish in 2011 regional fishery sampling programs based on the number of mass-marked fish released by each participating agency. Table 3.4 and Table 3.5 each provide historical information on encounters of marked and tagged fish for the run years 2000-8 and 2003-8 to identify Coho and Chinook tagged stocks that can be expected in these areas with MSFs.

Issues and Concerns

Proposals

All requested MM and MSF proposals were submitted prior to the annual meeting of the SFEC in November but most of these were not submitted by the deadline of November 1. Receiving the proposals by November 1 would give the SFEC membership time to review them prior to the meeting, allowing for more time for during the meeting to prepare timely commentary back to MSF proponents. In general all information requested was supplied for both the MM and MSF proposals.

Post-season Reports

Post-season reports on MSF are required for each MSF prosecuted. One of the basic functions of these reports is to provide a record of how fisheries were actually prosecuted (whether they took place) and whether there were any changes in the way the fisheries and sampling programs were conducted relative to the proposal. These reports are to be submitted in the form of three tables (Appendix I). The first two tables should be submitted by the annual PSC post-season meeting following the year of the fishery. Table I.3 of the three tables was included for Puget Sound MSFs for 2003 to 2009 in the *"Preliminary 2010 Post Season Report on United States Salmon Fisheries of Relevance to the Pacific Salmon Treaty"* December 2010. No MSF post-season reports/tables were found in the Canadian post-season report (Jan 6, 2011). No post-season reports for Table I.1 (sampling methods) or Table I.2 (MSFs actually implemented) were provided in either Party's post-season report.

New Chinook MSF proposals

SFEC received proposals for four existing fisheries, two for Coho and two for Chinook MSFs. These are for fisheries that have been prosecuted since 2003 (two of them), 2008, and 2009. No new MSFs that had not occurred previously were proposed for 2011.

Mixed-Bag Regulations

Regulations to implement MSFs are increasingly complex, making analysis difficult. Different types of mixed bag regulations are part of the MSFs proposed by BC, WA, and OR for recreational fisheries. In most cases this is a mixed bag, where only adults that are marked may be kept but both marked and unmarked juveniles may be retained, but as MSFs expand a variety of types of mixed bag regulations are being proposed (Table 4.3). The SFEC is not aware of adequate methods for estimating impacts on marked and unmarked fish under mixed bag regulations and the agencies proposing these mixed bag regulations should assist in developing the analytical tools to measure the impacts of these fisheries.

Recommendations and Issues Requiring PSC Direction

Proposal Review Process

It is recommended that the PSC request agencies to submit proposals for all potential 2012 MM and MSFs, and for agencies to provide both preliminary and final post-season reports on the conduct of MSFs within the timeframe adopted by the PSC. Agencies need to prioritize these tasks so that proposals and MSF post-season reports are completed and submitted in a timely manner.

Interagency Coordination and Cooperation

Mass marking, DIT, and CWT sampling programs are not sufficiently coordinated to support analysis by PSC technical committees. It is also not clear that agencies are collecting adequate and necessary data to permit correctly stratified, direct estimation of unmarked CWT recoveries in fisheries and escapements (or fish cohort reconstructions can be carried out on unmarked DIT releases. With the expansion of Chinook marine MSFs, the geographical range of electronic CWT sampling needs to be expanded and the number of DIT stocks needs to be increased. Specifically, ETD needs to be implemented by ODFW, beginning in 2012, for Oregon Coastal Chinook and Columbia River fall Chinook to recover DITs for Chinook exploitation rate indicator stocks. The SFEC recommends that DIT groups should be added for the following stocks:

Chinook DIT recommendations:

- Columbia River summer (Hanford reach Pools or Wells)
- Snake River fall subyearlings
- Willamette River spring (continue DIT program with electronic terminal sampling)
- North Oregon Coast (Salmon River)
- Mid Oregon Coast

Coho DIT recommendations:

- USFWS Eagle Creek – increase DIT release group size from 25,000 to the standard 50,000

The PSC should continue to support technical and policy processes to develop agreements to clarify responsibilities for maintaining a functional CWT system. These processes should build upon recommendations presented by the CWT Work Group in 2008.

[illegible]

[illegible]
[illegible] – October 2012

This technical report which is the product of concepts developed by the HRTC since June 2010 became a commitment in the 2011-2012 HRTC work plan. That work plan began to deliver on the commitments under the Treaty by focusing on the following 2 major objectives:

1. fostering effective sharing of information on habitat restoration initiatives, activities and practices, and promoting the establishment of a network of individuals to facilitate the exchange of information and knowledge, and
2. providing strategic advice to the Commission and to the Northern and Southern Fund Committees on habitat matters (upon request).

This report addresses the first objective by introducing a habitat restoration practitioner's directory (Appendix C), a new GIS map-based inventory of restoration projects funded by the Endowment Funds (Chapter 4), and strategic advice and guidance for designing effective restoration projects and assessing their benefits (Chapter 5).

Chapter 3 partially addresses the second objective by adding a habitat dimension to the SEF Strategic Plan by presenting two habitat status and trend case studies for stocks of concern to the Southern Endowment Fund (SEF). The HRTC recommends future efforts begin to address similar habitat condition and status reports for other stocks, particularly those of interest to the Northern Fund Committee.

[illegible]

Publications of the Pacific Salmon Commission

[illegible]

[illegible]

[illegible]

c. Joint Northern Boundary Technical Committee

No reports were finalized for publication during the reporting period.

d. Joint Transboundary Technical Committee

TCTR(02)-1 *Salmon Management and Enhancement Plans for the Stikine, Taku and Alsek Rivers, 2002* May 2002

TCTR (02)-2 *Estimates of Transboundary River Salmon Production, Harvest and Escapement and a Review of Joint Enhancement Activities in 2000* June 2002

e. Selective Fishery Evaluation Committee

SFEC (02)-1 *Summary of Mass Marking Activities and Mark Selective Fisheries Conducted by Canada and the United States, 2000-2000* April 2002

SFEC (02)-1 *Review of 2001 Mass Marking and Mark-Selective Fishery Proposals* January 2003

f. Habitat and Restoration Committee

HRTC (02)-1 *Assessment of Salmon Habitat Status and Trends and Restoration Project Effectiveness* October 2002

C. REPORTS OF THE FRASER RIVER PANEL

Report of the Fraser River Panel to the Pacific Salmon Commission on the 2000 Fraser River Sockeye Salmon Fishing Season May 2002

D. TECHNICAL REPORTS OF THE PACIFIC SALMON COMMISSION

Smith, J.E. and J.M. Bryan. *Mark Recapture Studies of Taku River Adult Sockeye Salmon Stocks in 2000* PSC Tech. Rep. No. 28. August 2002

Bryan, J.M. and J.E. Smith. *Mark Recapture Studies of Taku River Adult Sockeye Salmon Stocks in 2000* PSC Tech. Rep. No. 29. December 2002

E. PUBLICATIONS BY PACIFIC SALMON COMMISSION SECRETARIAT STAFF

No reports were finalized for publication during the reporting period.

F. REPORTS OF THE INTERNATIONAL PACIFIC SALMON COMMISSION

Responsibility for maintenance of the library of the International Pacific Salmon Fisheries Commission, on its termination December 31, 1985, was transferred to the Pacific Salmon Commission. Documents in the Library include historical archival papers which are available to researchers and other interested parties through contact with the Pacific Salmon Commission's Librarian.

Publication of John F. Roos' History of the International Pacific Salmon Fisheries Commission, and P. Gilhousen's Estimation of Fraser River Sockeye Escapements ended all publication series of the International Pacific Salmon Fisheries Commission. Copies of all in-print Progress Reports and Bulletins of the International Pacific Salmon Fisheries Commission are available free of charge through the Library of the Pacific Salmon Commission. Copies of the History of the International Pacific Salmon Fisheries Commission may also be ordered through the Library of the Pacific Salmon Commission.

G. DOCUMENTS SUBMITTED BY THE PARTIES

In compliance with provisions of the Treaty, the Parties provide annual post-season fishery reports and updates on their respective salmonid enhancement programs to the Commission. Documents received during 2012/13 were:

1. *Post Season Report for 2012 Canadian Treaty Limit Fisheries*. Canada Department of Fisheries and Oceans. January, 2013.

2. *Preliminary 2012 Post Season Report for United States Salmon Fisheries of Relevance to the Pacific Salmon Treaty*. United States Section, Pacific Salmon Commission. December, 2012

Report of the Auditors for 2012/2013

PART VII
AUDITORS' REPORT AND FINANCIAL STATEMENTS FOR THE PERIOD APRIL 1, 2008 TO MARCH 31, 2009

Financial Statements of

PACIFIC SALMON COMMISSION

Years ended March 31, 2013 and 2012

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INDEPENDENT AUDITORS' REPORT

To the Commissioners of the Pacific Salmon Commission

We have audited the accompanying financial statements of the Pacific Salmon Commission, which comprise the statements of financial position as at March 31, 2013, March 31, 2012 and April 1, 2011, the statements of operations and fund balances and cash flows for the years ended March 31, 2013 and March 31, 2012, and notes, comprising a summary of significant accounting policies and other explanatory information. The financial statements have been prepared by management in accordance with the financial reporting provisions of Chapter IX of the Pacific Salmon Commission Bylaws amended and adopted February 15, 2013.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with the financial reporting provisions of Chapter IX of the Pacific Salmon Commission Bylaws amended and adopted February 15, 2013; this includes determining that the basis of accounting is an acceptable basis for the preparation of these financial statements in the circumstances, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

KPMG LLP is a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity.
KPMG Canada provides services to KPMG LLP.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of the Pacific Salmon Commission as at March 31, 2013, March 31, 2012 and April 1, 2011 and its results of operations and its cash flows for the years ended March 31, 2013 and March 31, 2012 in accordance with the financial reporting provisions of Chapter IX of the Pacific Salmon Commission Bylaws amended and adopted February 15, 2013.

Basis of Accounting

Without modifying our opinion, we draw attention to note 2(a) to the financial statements, which describes the basis of accounting. The financial statements are prepared to assist the Pacific Salmon Commission to meet the requirements of the Treaty between the Government of Canada and the Government of the United States of America concerning Pacific Salmon effective January 1, 2013. As a result, the financial statements may not be suitable for other purposes.

Restriction on Use

Our report is intended solely for the Commissioners and the Governments of Canada and the United States of America and should not be used by parties other than the Commissioners and the Government of Canada and the United States of America.

KPMG LLP

Chartered Accountants

October 17, 2013

Burnaby, Canada

PACIFIC SALMON COMMISSION

Statements of Financial Position
(Expressed in Canadian dollars)

March 31, 2013

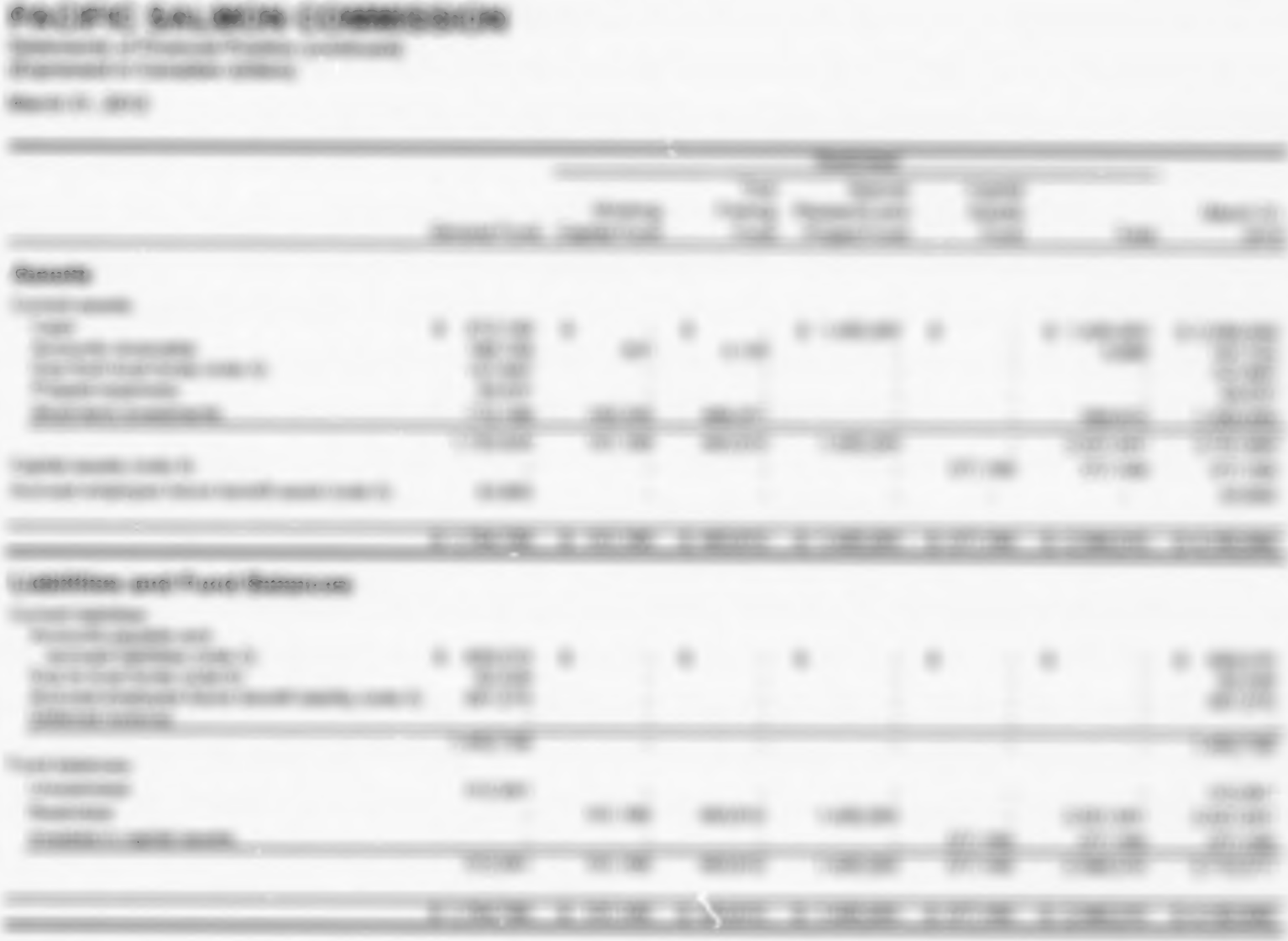
	General Fund	Working Capital Fund	Test Fishing Fund	Special Research and Project Fund	Capital Assets Fund	Total	March 31, 2013
Assets							
Current assets							
Cash	$ -	$ -	$ -	$ 1,870,008	$ -	$ 1,870,008	$ 1,870,008
Accounts receivable	139,409	828	4,068	-	-	4,914	144,323
Due from trust funds (note 6)	48,627	-	-	-	-	-	48,627
Prepaid expenses	48,742	-	-	-	-	-	48,742
Short-term investments	1,934,296	198,321	916,471	-	-	914,792	2,850,088
	2,171,262	101,150	916,861	1,870,008	-	2,291,218	4,462,280
Capital assets (note 4)	-	-	-	-	527,243	527,243	527,243
	$ 2,171,262	$ 101,150	$ 916,861	$ 1,870,008	$ 527,243	$ 2,818,461	$ 4,989,523
Liabilities and Fund Balances							
Current liabilities							
Bank indebtedness	$ 73,412	$ -	$ -	$ -	$ -	$ -	$ 73,412
Accounts payable and accrued liabilities (note 3)	665,469	-	-	-	-	-	665,469
Accrued employee future benefit liability (note 5)	765,467	-	-	-	-	-	765,467
Deferred revenue	97,975	-	-	-	-	-	97,975
	1,604,373	-	-	-	-	-	1,604,373
Fund balances							
Unrestricted	532,889	-	-	-	-	-	532,889
Restricted	-	101,150	916,861	1,870,008	-	2,291,218	2,291,218
Invested in capital assets	-	-	-	-	527,243	527,243	527,243
	532,889	101,150	916,861	1,870,008	527,243	2,818,461	3,351,350
	$ 2,171,262	$ 101,150	$ 916,861	$ 1,870,008	$ 527,243	$ 2,818,461	$ 4,989,523

See accompanying notes to financial statements.

Approved on behalf of the Commission

Chair, Standing Committee on Finance and Administration

Vice-Chair, Standing Committee on Finance and Administration



PACIFIC SALMON COMMISSION

Statements of Financial Position (continued)
(Expressed in Canadian dollars)

April 1, 2011

	General Fund	Restricted: Working Capital Fund	Restricted: Test Fishing Fund	Restricted: Special Research and Project Fund	Restricted: Capital Assets Fund	Restricted: Total	April 1, 2011
Assets							
Current assets							
Cash	$ 760,207	$ -	$ 25,642	$ 1,104,888	-	$ 1,130,530	$ 1,890,737
Accounts receivable	210,592	592	1,672	-	-	2,264	212,856
Due from trust funds (note 6)	157,578	-	-	-	-	-	157,578
Prepaid expenses	32,051	-	-	-	-	-	32,051
Short-term investments	671,899	101,959	478,442	-	-	576,101	1,550,000
	2,104,327	102,551	501,956	1,104,888	-	1,708,895	3,843,222
Capital assets (note 4)	-	-	-	-	363,563	363,563	363,563
Accrued employee future benefit asset (note 5)	215,733	-	-	-	-	-	215,733
	$ 2,320,060	$ 102,551	$ 501,956	$ 1,104,888	$ 363,563	$ 2,072,458	$ 4,422,518
Liabilities and Fund Balances							
Current liabilities							
Accounts payable and accrued liabilities (note 3)	$ 1,259,517	$ -	$ -	$ -	$ -	$ -	$ 1,259,517
Accrued employee future benefit liability (note 5)	529,535	-	-	-	-	-	529,535
Deferred revenue	489,125	-	-	-	-	-	489,125
	2,278,177	-	-	-	-	-	2,278,177
Fund balances							
Unrestricted	71,883	-	-	-	-	-	71,883
Restricted	-	102,551	501,956	1,104,888	-	1,708,895	1,708,895
Invested in capital assets	-	-	-	-	363,563	363,563	363,563
	71,883	102,551	501,956	1,104,888	363,563	2,072,458	2,144,336
	$ 2,320,060	$ 102,551	$ 501,956	$ 1,104,888	$ 363,563	$ 2,072,458	$ 4,422,518

PACIFIC SALMON COMMISSION

Statements of Operations and Fund Balances
(Expressed in Canadian dollars)

Year ended March 31, 2013

		Restricted					
	General Fund	Working Capital Fund	Test Fishing Fund	Special Research and Project Fund	Capital Assets Fund	Total	2013
Revenue:							
Contributions from contracting parties (note 3)	$ 3,759,272	$ -	$ -	$ -	$ -	$ -	$ 3,759,272
Grants	64,164	-	-	2,377,798	-	2,377,798	2,441,962
Interest	23,474	1,151	5,675	-	-	6,826	30,300
Other	52,965	-	-	-	-	-	52,965
Foreign exchange	27,502	-	-	-	-	-	27,502
Test fishing	1,087,237	-	-	-	-	-	1,087,237
	5,014,614	1,151	5,675	2,377,798	-	2,384,624	7,399,238
Expenses:							
Amortization	-	-	-	-	142,325	142,325	142,325
Salaries and employee benefits	2,868,572	-	-	-	-	-	2,868,572
Travel and transportation	115,034	-	-	-	-	-	115,034
Rents and communication	115,926	-	-	-	-	-	115,926
Printing and reproductions	3,562	-	-	-	-	-	3,562
Contract services	469,134	-	-	-	-	-	469,134
Materials and supplies	32,033	-	-	-	-	-	32,033
Test fishing	1,066,963	-	-	-	-	-	1,066,963
Loss on disposal of capital assets	-	-	-	-	10,856	10,856	10,856
Consultations and workshops	-	-	-	2,133,553	-	2,133,553	2,133,553
	4,671,224	-	-	2,133,553	153,181	2,286,734	6,957,958
Excess (deficiency) of revenue over expenses	343,390	1,151	5,675	244,245	(153,181)	97,890	441,280
Fund balance, beginning of year	312,061	101,166	493,612	1,426,263	377,169	2,398,210	2,710,271
Interfund transfers	(122,462)	(1,167)	20,274	-	103,355	122,462	-
Fund balance, end of year	$ 532,989	$ 101,150	$ 519,561	$ 1,670,508	$ 327,343	$ 2,618,562	$ 3,151,551

See accompanying notes to financial statements.

PACIFIC SALMON COMMISSION

Statements of Operations and Fund Balances (continued)
(Expressed in Canadian dollars)

Year ended March 31, 2012

		Restricted					
	General Fund	Working Capital Fund	Test Fishing Fund	Special Research and Project Fund	Capital Assets Fund	Total	2012
Revenue:							
Contributions from contracting parties (note 3)	$ 3,759,272	$ -	$ -	$ -	$ -	$ -	$ 3,759,272
Grants	128,874	-	-	2,438,711	-	2,438,711	2,567,585
Interest	16,151	1,167	5,818	-	-	6,985	23,136
Other	64,405	-	-	-	-	-	64,405
Foreign exchange	170,158	-	-	-	-	-	170,158
Test fishing	1,251,690	-	-	-	-	-	1,251,690
	5,390,550	1,167	5,818	2,438,711	-	2,445,696	7,836,246
Expenses:							
Amortization	-	-	-	-	169,311	169,311	169,311
Salaries and employee benefits	2,834,079	-	-	-	-	-	2,834,079
Travel and transportation	76,230	-	-	-	-	-	76,230
Rents and communication	122,967	-	-	-	-	-	122,967
Printing and reproductions	723	-	-	-	-	-	723
Contract services	610,659	-	-	-	-	-	610,659
Materials and supplies	64,326	-	-	-	-	-	64,326
Test fishing	1,265,852	-	-	-	-	-	1,265,852
Loss on disposal of capital assets	-	-	-	-	8,830	8,830	8,830
Consultations and workshops	-	-	-	2,117,336	-	2,117,336	2,117,336
	4,974,836	-	-	2,117,336	178,141	2,295,477	7,270,313
Excess (deficiency) of revenue over expenses	415,714	1,167	5,818	321,375	(178,141)	150,219	565,933
Fund balance, beginning of year	71,883	102,051	501,956	1,104,888	363,560	2,072,455	2,144,338
Interfund transfers	(175,536)	(2,052)	(14,162)	-	191,750	175,536	-
Fund balance, end of year	$ 312,061	$ 101,166	$ 493,612	$ 1,426,263	$ 377,169	$ 2,398,210	$ 2,710,271

PACIFIC SALMON COMMISSION

Statements of Cash Flows
(Expressed in Canadian dollars)

Years ended March 31, 2013 and 2012

	2013	2012
Cash provided by (used in):		
Operations:		
Excess of revenue over expenses	$ 441,280	$ 565,933
Items not involving cash:		
Amortization	142,325	169,311
Loss on disposal of capital assets	10,856	8,830
Net benefit plan expense	673,609	511,509
Employer contributions for employee future benefits	(397,521)	(307,902)
Net change in non-cash operating working capital	(19,107)	(797,659)
	851,442	150,022
Investing:		
Additions to capital assets	(105,955)	(193,345)
Proceeds on sale of capital assets	2,600	1,595
Redemption of short-term investments	1,250,000	1,500,000
Purchase of short-term investments	(2,500,000)	(1,250,000)
	(1,353,355)	58,250
Financing:		
Increase in bank indebtedness	73,412	-
Increase (decrease) in cash	(428,501)	208,272
Cash, beginning of year	2,099,009	1,890,737
Cash, end of year	$ 1,670,508	$ 2,099,009

See accompanying notes to financial statements.

PACIFIC SALMON COMMISSION

Notes to Financial Statements
(Expressed in Canadian dollars)

Years ended March 31, 2013 and 2012

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1. **Nature of organization:**

   Pacific Salmon Commission (the "Commission") was established by the Treaty between the Governments of Canada and the United States of America (the "Contracting Parties") to promote cooperation in the management, research and enhancement of Pacific Salmon stocks. The Treaty was ratified on March 18, 1985 and amended subsequently.

2. **Significant accounting policies:**

   (a) Basis of accounting:

   These financial statements have been prepared in accordance with the financial reporting provisions of Chapter IX of the Pacific Salmon Commission Bylaws amended and adopted February 15, 2013. The financial reporting provisions of Chapter IX of the Pacific Salmon Commission Bylaws amended and adopted February 15, 2013 require the financial statements to be prepared in a manner consistent with generally accepted accounting principles ("GAAP") except that expenses are recognized at the time that the commitment for goods and services are made through purchase orders, rather than at the time the goods or services are received. This exception is to comply with Chapter IX, Section D, Rule 11 of the Bylaws.

   Canadian GAAP has been interpreted to mean Canadian Accounting Standards for Not-for-Profit Organizations in Part III of the Canadian Institute of Chartered Accountants ("CICA") Handbook ("Not-for-Profit Standards"). These are the first financial statements prepared in accordance with this financial reporting framework. Previously, Canadian GAAP has been interpreted to mean Part V of the CICA Handbook – Accounting.

   In accordance with the transitional provisions in Not-for-Profit Standards, the Commission has adopted the changes retrospectively, subject to certain exemptions allowed under these standards. The transition date is April 1, 2011 and all comparative information provided has been presented by applying Not-for-Profit Standards.

   There was no impact on the statements of financial position, statements of operations and fund balances and cash flows as at the transition date.

   (b) Fund accounting and revenue recognition:

   The Commission follows the restricted fund method of accounting for contributions.

   Restricted contributions related to general operations are initially deferred and recognized as revenue of the General Fund in the year in which the related expenses are incurred. All other restricted contributions are recognized as revenue of the appropriate restricted fund.

   Unrestricted contributions are recognized as revenue of the General Fund in the year they are received or receivable, if the amount to be received can be reasonably estimated and collection is reasonably assured.

5. **Significant accounting policies (continued):**

(b) Fund accounting and revenue recognition (continued):

The Fund classifications are as follows:

(i) The General Fund includes funds provided annually through contributions from the Contracting Parties. By agreement of the Contracting Parties, any unexpended balance remaining at the end of one fiscal year may be used to offset contributions in the following year or may be used to offset a shortfall between contributions and approved expenses in the following year. As a result, all amounts are recognized as revenue once received or receivable.

(ii) The Working Capital Fund represents monies contributed by the Contracting Parties to be used on a temporary basis to satisfy the capital requirements of the Committee until receipt of new contributions from the Contracting Parties at the beginning of a fiscal year, or for special programs not contained in the regular budget but approved during the fiscal year. Any surplus above a pre-determined fixed limit in the account at the end of the fiscal year is transferred to the general fund and is treated as unrestricted income.

(iii) The Test Fishing Fund is established as a revolving fund in which a portion of net test fishing revenues realized in years of high abundance are reserved, to be used to support test fishing programs in years of low abundance and when conservation concerns are an issue.

(iv) The Special Research and Project Fund represents monies set aside to fund additional programs as determined by the Contracting Parties, including studies related to Coho Salmon, US Grant Funds for Chinook Technical Committee Support, Chinook Sentinel Stocks Program, Anadromous Fish Grant, Decline in Survival of Fraser River Sockeye, and the Killer Whale Workshop.

(v) The Capital Assets Fund reflects the Commission's capital asset transactions. Amortization is charged to the Capital Assets Fund.

Transfers between the funds are reviewed and approved by the Commissioner.

(c) Financial instruments:

Financial instruments are recorded at fair value on initial recognition. Freestanding derivative instruments that are not in a qualifying hedging relationship and equity instruments that are quoted in an active market are subsequently measured at fair value. All other financial instruments are subsequently recorded at cost or amortized cost, unless management has elected to carry the instruments at fair value. The Commission has not elected to carry any such financial instruments at fair value.

Transaction costs incurred on the acquisition of financial instruments measured subsequently at fair value are expensed as incurred. All other financial instruments are adjusted by transaction costs incurred on acquisition and financing costs, which are amortized using the straight-line method.

5. Significant accounting policies (continued):

(c) Financial instruments (continued):

Financial assets are assessed for impairment on an annual basis at the end of the fiscal year if there are indications of impairment. If there is an indication of impairment, the Commission determines if there is a significant adverse change in the expected amount or timing of future cash flows from the financial asset. If there is a significant adverse change in the expected cash flows, the carrying value of the financial asset is reduced to the highest of the present value of the expected cash flows, the amount that could be realized from selling the financial asset or the amount the Commission expects to realize by exercising its right to any collateral. If events and circumstances reverse in a future period, an impairment loss will be reversed to the extent of the improvement, not exceeding the initial carrying value.

(d) Capital assets:

Capital assets are stated at cost less accumulated amortization. Costs of repairs and replacements of a routine nature are charged as a current expense while those expenses which improve or extend the useful life of the assets are capitalized. Amortization is provided using the straight-line method as follows:

Automobiles	5 years
Boats	5 years
Computer equipment and software	3 years
Equipment	5 years
Furniture and fixtures	10 years
Leasehold improvements	Over life of lease

(e) Income taxes:

The Commission is a non-taxable organization under the Foreign Missions and International Organizations Act (1991).

(f) Post-employment benefits:

The Commission has a defined benefit pension plan covering its employees. The benefits are based on years of service and final average salary. The Commission also sponsors a defined benefit life insurance and health care plan for substantially all retirees and employees.

The Commission uses the deferral and amortization approach to account for its defined benefit plans. The Commission accrues its obligations under the defined benefit plans as the employees render the services necessary to earn the pension and other retirement benefits. The actuarial determination of the accrued benefit obligations for pensions and other retirement benefits uses the projected benefit method prorated on service (which incorporates management's best estimate of future salary levels, other cost escalation, retirement ages of employees, and other actuarial factors). The measurement date of the plan assets and accrued benefit obligation coincides with the Commission's fiscal year. The most recent actuarial valuation of the benefit plans for funding purposes was as of January 1, 2011, and the next required valuation will be as of January 1, 2014.

3. Significant accounting policies (continued):

(k) Post-employment benefits (continued):

Actuarial gains (losses) on plan assets arise from the difference between the actual return on plan assets for a period and the expected return on plan assets for that period. For the purpose of calculating the expected return on plan assets, the assets are valued at fair value. Actuarial gains (losses) on the accrued benefit obligation arise from differences between actual and expected experience and from changes in the actuarial assumptions used to determine the accrued benefit obligation. The excess of the net accumulated actuarial gains (losses) over 10% of the greater of the accrued benefit obligation and the fair value of plan assets is amortized over the average remaining service period of active employees. The average remaining service period of the active employees covered by the pension plan is 13 years (2013 - 14 years). The average remaining service period of the active employees covered by the other retirement benefit plan is 14 years (2013 - 14 years).

Past service costs arising from plan amendments are deferred and amortized on a straight-line basis over the average remaining service period of employees active at the date of amendment.

(q) Foreign exchange translation:

Transactions originating in foreign currencies are translated at the exchange rate prevailing at the transaction dates. Assets and liabilities denominated in foreign currency at the year-end date are translated to equivalent Canadian amounts at the rate of exchange in effect at that date. Foreign exchange gains and losses resulting from translation are included in the determination of income or deficiency of revenue over expenses.

(r) Use of estimates:

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant areas requiring the use of management estimates relate to the determination of the valuation of accounts receivable, useful lives of capital assets for amortization, the estimate of liabilities and contingencies, and the assumptions with respect to post-employment benefits. Actual results could differ from those estimates.

(s) Short-term investments:

The short-term investments are managed by an external investment manager, and are recorded at amortized cost.

5. Advances payable

During the year ended March 31, 2013, the Commission received operating contributions from the Contracting Parties totalling $5,150,000 (March 31, 2012 - $5,150,000). Each U.S. and Canadian Section received $2,575,000 (March 31, 2012 - as each U.S. and Canada has 2 Contracting Parties). The U.S. advances received $81,575 (March 31, 2012 - as each U.S. Section has 2 Contracting Parties) from the Government of the United States of America relating to future periods.

The Commission received $750,000 (March 31, 2012 - $887,500) each U.S. and Canadian contributions from the Government of Canada as "advances" from Fisheries providing cost recovery arrangements, which has been recorded in the general fund. Under the terms of the agreement any unspent funds must be repaid to the Government of Canada. The unspent amount of $500,000 (March 31, 2012 - $362,500) each U.S. and Canadian (2012) has been recorded within accounts payable.

The office and warehouse premises of the Commission are provided by the Government of Canada at no charge.

6. Capital assets

March 31, 2013	Cost	Accumulated amortization	Net book value
Automobiles	$ [illegible]	$ [illegible]	$ [illegible]
Boats	[illegible]	[illegible]	[illegible]
Computer equipment	[illegible]	[illegible]	[illegible]
Computer software	[illegible]	[illegible]	[illegible]
Equipment	[illegible]	[illegible]	[illegible]
Furniture and fixtures	[illegible]	[illegible]	[illegible]
Leasehold improvements	[illegible]	[illegible]	[illegible]
	$ [illegible]	$ [illegible]	$ [illegible]

March 31, 2012	Cost	Accumulated amortization	Net book value
Automobiles	$ [illegible]	$ [illegible]	$ [illegible]
Boats	[illegible]	[illegible]	[illegible]
Computer equipment	[illegible]	[illegible]	[illegible]
Computer software	[illegible]	[illegible]	[illegible]
Equipment	[illegible]	[illegible]	[illegible]
Furniture and fixtures	[illegible]	[illegible]	[illegible]
Leasehold improvements	[illegible]	[illegible]	[illegible]
	$ [illegible]	$ [illegible]	$ [illegible]

[redacted]

[illegible]

8. Employee future benefits (continued):

The Commission's net benefit plan expense is as follows:

	March 31, 2013	March 31, 2012	April 1, 2011
Current service cost, net	$ 387,200	$ 326,100	$ 292,300
Interest cost	568,800	598,949	568,122
Expected return on plan assets	(515,585)	(520,280)	(479,198)
Amortization of transitional obligation	-	16,884	16,884
Amortization of past service cost	264	264	264
Amortization of net actuarial loss	256,931	131,718	151,830
Net benefit plan expense	$ 697,216	$ 511,939	$ 550,102

The net benefit plan expense is included in salaries and employee benefits on the statement of operations and fund balances.

9. Trust funds:

The Commission administers and holds in trust the following funds which are not included in the Commission's financial statements:

(a) Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund and Southern Boundary and Transboundary River Restoration and Enhancement Trust Fund:

Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund ("Northern Fund") was created by the Governments of the United States of America and Canada to manage their interests in the Commission to promote cooperation in the management, research and enhancement of Pacific Salmon stocks. The Northern Boundary is a non-taxable organization under the Foreign Missions and International Organizations Act (1991) and is not subject to income tax. The income earned on these contributions is distributed by the Commission staff as directed by the Northern Fund Committee.

Southern Boundary and Transboundary River Restoration and Enhancement Trust Fund ("Southern Fund") was created by the Governments of the United States of America and Canada to manage their interests in the Commission to promote cooperation in the management, research and enhancement of Pacific Salmon stocks. The Southern Boundary is defined as a non-taxable organization under the Foreign Missions and International Organizations Act (1991) and is not subject to income tax. The income earned on these contributions is distributed by the Commission staff as directed by the Southern Fund Committee.

During the fiscal year ended March 31, 2013, the Commission received funding for projects from the Northern Fund and Southern Fund totaling $2,674,543 (March 31, 2012 - $2,336,410; April 1, 2011 - $2,965,530). As at March 31, 2013, the Commission had a receivable from the Northern Fund and Southern Fund of $24,394 (March 31, 2012 - $62,239 payable; April 1, 2011 - $137,378 receivable).

6. Trust Funds (continued):

(b) Payroll Trust Funds:

The Commission administers and holds trust funds on behalf of the Government of the United States to distribute U.S. section salary under a Memorandum of Understanding. These amounts have been excluded from the statement of financial position and statement of operations and fund balances of the Commission.

(c) U.S. Expenditures Trust Funds:

The Commission administers and holds trust funds on behalf of the Government of the United States of America. They are to be expended at the direction of the Government of the United States of America. These amounts have been excluded from the statements of financial position and statement of operations and fund balances of the Commission.

(d) Yukon River Fund:

Under the terms of an interim Yukon River Salmon Agreement in 1995, the United States and Canada established the Yukon River Salmon Restoration and Enhancement ("R&E") Fund and the Commission created an account to hold associated monies. The R&E fund and its governing Yukon River Panel were finalized in the 2002 Yukon River Salmon Agreement and associated treaty amendments. The Commission Secretariat administers and holds R&E trust funds on behalf of the Yukon River Panel. The Yukon River Panel provides direction on how the monies are to be disbursed from the Fund. These amounts have been excluded from the statements of financial position and statement of operations and fund balances of the Commission.

During the year, the Fund paid $66,322 to the Commission for administrative services. As at March 31, 2013, the Commission had a receivable from the Fund of $22,233 (March 31, 2012 - $121,697; April 1, 2011 - nil), representing a reimbursement for expenses paid by the Commission on behalf of the Fund.

6. Trust Funds (continued):

(e) Summary of trust fund balances:

	Northern Fund	Southern Fund	Yukon River Fund	US Payroll Trust Funds	US Expenditure Trust Funds	2013 Total	2012 Total
Assets	$ 113,192,897	$ 92,438,340	$ 425,653	$ 190,919	$ 456,749	$ 206,704,558	$ 193,820,449
Liabilities	$ 178,952	$ 146,699	$ 9,922	$ 190,919	$ 456,749	$ 983,241	$ 1,190,208
Fund balances	113,013,945	92,291,641	415,731	-	-	205,721,317	192,631,241
	$ 113,192,897	$ 92,438,340	$ 425,653	$ 190,919	$ 456,749	$ 206,704,558	$ 193,821,449

	Northern Fund	Southern Fund	Yukon River Fund	US Payroll Trust Funds	US Expenditure Trust Funds	2013 Total	2012 Total
Fund balance, beginning of year	$ 105,642,479	$ 86,790,734	$ 198,028	$ -	$ -	$ 192,631,241	$ 188,015,265
Revenue	11,023,601	9,081,178	1,255,085	-	-	21,359,864	12,124,763
Expenses	3,652,135	3,580,271	1,037,382	-	-	8,249,788	7,508,787
	7,371,466	5,500,907	217,703	-	-	13,090,076	4,615,976
Fund balance, end of year	$ 113,013,945	$ 92,291,641	$ 415,731	$ -	$ -	$ 205,721,317	$ 192,631,241

Cash flow provided by (used in):

	Northern Fund	Southern Fund	Yukon River Fund	US Payroll Trust Funds	US Expenditure Trust Funds	2013 Total	2012 Total
Operations	$ (3,514,520)	$ (3,326,233)	$ 103,239	$ -	$ -	$ (6,737,514)	$ (7,165,606)

7. Contractual obligations:

The Commission has entered into a number of project grant contracts as at March 31, 2013 for the future funding of research projects to be completed subsequent to the year end.

These contractual obligations are funded in installments and payments are due based on conditions included in the contract being satisfied. As such, no liability has been accrued in the financial statements as the Commission is not liable until these conditions have been met.

As at March 31, 2013, the research project contractual obligations are $993,109 (March 31, 2012 - $572,947; April 1, 2011 - $747,670).

8. Financial instruments:

(a) Credit risk:

Credit risk is the risk that a third party to a financial instrument might fail to meet its obligations under the terms of the financial instrument. For cash and accounts receivable, the Commission's credit risk is limited to the carrying value on the statement of financial position. Management does not believe that the Commission is subject to any significant concentration of credit risk.

(b) Liquidity risk:

Liquidity risk is the risk that an entity will not be able to meet its obligations associated with financial liabilities.

The Commission manages liquidity risk by maintaining adequate cash and available credit facilities with its banking provider. The Commission monitors the cash flow to ensure a sufficient continuity of funding from the Contracting Parties.

(c) Interest rate risk:

The Commission is not exposed to significant interest risk as it does not have amounts payable that are charged interest.

Combined Financial Statements of

NORTHERN BOUNDARY AND TRANSBOUNDARY RIVER RESTORATION AND ENHANCEMENT TRUST FUND

and

SOUTHERN BOUNDARY RESTORATION AND ENHANCEMENT TRUST FUND

Years ended March 31, 2013 and 2012

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INDEPENDENT AUDITORS' REPORT

To the Trustees of Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund and Southern Boundary Restoration and Enhancement Trust Fund (the "Trustees")

We have audited the accompanying combined financial statements of Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund and the Southern Boundary Restoration and Enhancement Trust Fund (the "Trusts"), which comprise the combined statements of financial position as at March 31, 2013, March 31, 2012 and April 1, 2011, the combined statements of operations and fund balances and cash flows for the years ended March 31, 2013 and March 31, 2012, and notes, comprising a summary of significant accounting policies and other explanatory information. The combined financial statements have been prepared by management in accordance with the basis of accounting in note 2(a) to the combined financial statements.

Management's Responsibility for the Combined Financial Statements

Management is responsible for the preparation and fair presentation of these combined financial statements in accordance with the basis of accounting in note 2(a) to the combined financial statements; this includes determining that the basis of accounting is an acceptable basis for the preparation of these combined financial statements in the circumstances, and for such internal control as management determines is necessary to enable the preparation of combined financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these combined financial statements based on our audits. We conducted our audits in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audits to obtain reasonable assurance about whether the combined financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the combined financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the combined financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the combined financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the combined financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

KPMG LLP is a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity.
KPMG Canada provides services to KPMG LLP.

Opinion

In our opinion, the combined financial statements present fairly, in all material respects, the financial position of Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund and Southern Boundary Restoration and Enhancement Trust Fund as at March 31, 2013, March 31, 2012 and April 1, 2011 and its combined results of operations and its combined cash flows for the years ended March 31, 2013 and March 31, 2012, in accordance with the basis of accounting in note 2(a) to the combined financial statements.

Basis of Accounting

Without modifying our opinion, we draw attention to note 2(a) to the combined financial statements, which describes the basis of accounting. The combined financial statements are prepared for the Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund and Southern Boundary Restoration and Enhancement Trust Fund to meet their reporting requirements. As a result, the financial statements may not be suitable for other purposes.

Restriction on Use

Our report is intended solely for the Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund and Southern Boundary Restoration and Enhancement Trust Fund, Pacific Salmon Commission, the Government of Canada and the Government of the United States of America and should not be used by parties other than the Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund and Southern Boundary Restoration and Enhancement Trust Fund, Pacific Salmon Commission, the Government of Canada and the Government of the United States of America.

KPMG LLP

Chartered Accountants

November 14, 2013

Burnaby, Canada

NORTHERN BOUNDARY AND TRANSBOUNDARY RIVER RESTORATION AND ENHANCEMENT TRUST FUND
and
SOUTHERN BOUNDARY RESTORATION AND ENHANCEMENT TRUST FUND
Combined Statements of Financial Position
(Expressed in Canadian dollars)

March 31, 2013

	Northern Boundary	Southern Boundary	Total
Assets			
Current assets			
Cash and cash equivalents	$ 275,842	$ 373,086	$ 648,728
Interest receivable	29,000	18,735	47,735
Short-term investments	3,750,000	3,250,000	6,000,000
	4,054,842	3,641,811	6,696,463
Investments (note 3)	109,138,255	88,795,529	198,934,784
	$ 113,192,897	$ 92,436,340	$ 205,631,237
Liabilities and Fund Balance			
Current liabilities			
Accounts payable and accrued liabilities	$ 168,841	$ 126,498	$ 295,139
Due to Pacific Salmon Commission (note 6)	22,311	17,501	39,812
	178,952	140,999	329,951
Fund balances	113,013,945	92,291,641	205,305,686
	$ 113,192,897	$ 92,436,340	$ 205,631,237

Contractual obligations (note 4)
Minimum fund balance (note 5)

See accompanying notes to combined financial statements.

Approved on behalf of the Trustees:

U.S. Co- Chair Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund

Can Co- Chair Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund

U.S. Co- Chair Southern Boundary Restoration and Enhancement Fund

Can Co- Chair Southern Boundary Restoration and Enhancement Fund

NORTHERN BOUNDARY AND TRANSBOUNDARY RIVER RESTORATION AND ENHANCEMENT TRUST FUND
and
SOUTHERN BOUNDARY RESTORATION AND ENHANCEMENT TRUST FUND

Combined Statements of Financial Position (continued)
(Expressed in Canadian dollars)

March 31, 2012

	Northern Boundary	Southern Boundary	Total
Assets			
Current assets			
Cash and cash equivalents	$ 65,066	$ 495,908	$ 560,967
Due from Pacific Salmon Commission (note 6)	-	94,587	94,587
Interest receivable	13,827	10,414	24,241
Short-term investments	2,750,000	1,250,000	4,000,000
	2,828,893	1,840,909	4,669,795
Investments (note 3)	102,929,401	65,021,528	167,950,829
	$ 105,758,427	$ 86,862,287	$ 172,620,624
Liabilities and Fund Balance			
Current liabilities			
Accounts payable and accrued liabilities	$ 53,000	$ 71,353	$ 124,353
Due to Pacific Salmon Commission (note 6)	52,348	-	52,348
	115,348	71,353	187,211
Fund balances	105,643,479	86,790,734	172,433,213
	$ 105,758,427	$ 86,862,287	$ 172,620,624

NORTHERN BOUNDARY AND TRANSBOUNDARY RIVER RESTORATION AND ENHANCEMENT TRUST FUND
and
SOUTHERN BOUNDARY RESTORATION AND ENHANCEMENT TRUST FUND

Combined Statements of Financial Position (continued)
(Expressed in Canadian dollars)

April 1, 2011

	Northern Boundary	Southern Boundary	Total
Assets			
Current assets:			
Cash and cash equivalents	$ [illegible]	$ [illegible]	$ [illegible]
Interest receivable	[illegible]	[illegible]	[illegible]
Short-term investments	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
Investments (note 3)	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
Liabilities and Fund Balance			
Current liabilities:			
Accounts payable and accrued liabilities	$ [illegible]	$ [illegible]	$ [illegible]
Due to Pacific Salmon Commission (note 4)	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
Fund balance	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[illegible]

NORTHERN BOUNDARY AND TRANSBOUNDARY RIVER RESTORATION AND ENHANCEMENT TRUST FUND

and

SOUTHERN BOUNDARY RESTORATION AND ENHANCEMENT TRUST FUND

Notes to Combined Financial Statements
(Expressed in Canadian dollars)

Years ended March 31, 2013 and 2012

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1. **Nature of organization:**

   The Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund and the Southern Boundary Restoration and Enhancement Trust Fund (the "Trusts") were created by the Governments of the United States of America and Canada (the "Contracting Parties") to promote cooperation in the management, research and enhancement of Pacific salmon stocks.

2. **Significant accounting policies:**

   (a) Basis of accounting:

   These financial statements have been prepared in accordance with the significant accounting policies set out below. These financial statements are consistent with generally accepted accounting principles ("GAAP") except that they are presented on a combined basis in order to reflect the common administration of the Trusts by the management of the Pacific Salmon Commission.

   Canadian GAAP has been interpreted to mean Canadian Accounting Standards for Not-for-Profit Organizations in Part III of the Canadian Institute of Chartered Accountants ("CICA") Handbook ("Not-for-Profit Standards"). These are the first financial statements prepared in accordance with this financial reporting framework. Previously Canadian GAAP has been interpreted to mean Part V of the CICA Handbook – Accounting.

   In accordance with the transitional provisions in Not-for-Profit Standards, the Trusts have adopted the changes retrospectively, subject to certain exemptions allowed under these standards. The transition date is April 1, 2011 and all comparative information provided has been presented by applying Not-for-Profit Standards.

   There was no impact on the statements of financial position, statements of operations and fund balances and cash flows as at the transition date.

   (b) Financial instruments:

   Financial instruments are recorded at fair value on initial recognition. Freestanding derivative instruments that are not in a qualifying hedging relationship and equity instruments that are quoted in an active market are subsequently measured at fair value. All other financial instruments are subsequently recorded at cost or amortized cost, unless management has elected to carry the instruments at fair value. The Trusts have elected to carry investments at fair value.

2. Significant accounting policies (continued):

(b) Financial instruments (continued):

Transaction costs incurred on the acquisition of financial instruments measured subsequently at fair value are expensed as incurred. All other financial instruments are adjusted by transaction costs incurred on acquisition and financing costs, which are amortized using the straight-line method.

Financial assets are assessed for impairment on an annual basis at the end of the fiscal year if there are indicators of impairment. If there is an indicator of impairment, the Trusts determines if there is a significant adverse change in the expected amount or timing of future cash flows from the financial asset. If there is a significant adverse change in the expected cash flows, the carrying value of the financial asset is reduced to the highest of the present value of the expected cash flows, the amount that could be realized from selling the financial asset or the amount the Trusts expects to realize by exercising its right to any collateral. If events and circumstances reverse in a future period, an impairment loss will be reversed to the extent of the improvement, not exceeding the initial carrying value.

(c) Cash and cash equivalents:

Cash and cash equivalents are comprised of cash on hand and short term deposits with original maturities of three months or less.

(d) Revenue recognition:

The Trusts follow the deferral method of accounting for contributions. Unrestricted revenue is recognized when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured. Funding received for specific purposes is deferred and recognized as revenue in the period in which the related expenses are incurred, or the restrictions are met.

(e) Income taxes:

The Trusts are non-taxable organizations under the Foreign Missions and International Organizations Act (1991).

2. Significant accounting policies (continued):

(f) Foreign exchange translation:

Transactions originating in foreign currencies are translated at the exchange rate in effect at the transaction dates. Monetary items and non-monetary assets that are carried at market value and are denominated in foreign currency at the year-end date are translated to equivalent Canadian amounts at the exchange rate in effect at the year-end date. Foreign exchange gains and losses resulting from translation are included in the determination of excess or deficiency of revenue over expenses.

(g) Use of estimates:

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from these estimates.

(h) Contractual obligations:

Contractual obligations are funded in instalments and payments are due based on conditions included in the contract being satisfied. Expenses and liabilities are recognized in the financial statements as these conditions are met.

3. Investments:

Investments consist of mutual funds under the supervision of an investment manager and custodian and consist of the following managed funds:

	Northern Boundary	Southern Boundary	March 31, 2013 Total	March 31, 2012 Total	April 1, 2011 Total
International Equity Fund	$ 23,597,642	$ 19,415,615	$ 43,013,257	$ 30,763,787	$ 34,652,192
US Equity Fund	16,412,247	13,503,632	29,915,879	57,956,102	54,358,055
Global Equity Fund	18,190,395	14,966,653	33,157,048	40,767,190	42,458,807
Global Infrastructure	11,731,911	9,652,755	21,384,666	-	-
Canadian Bond	28,492,224	23,442,768	51,934,992	58,463,850	53,261,288
US Real Estate	10,713,836	8,815,106	19,528,942	-	-
	$ 109,138,255	$ 89,796,529	$ 198,934,784	$ 187,950,929	$ 184,730,342

4. Contractual obligations:

The Trusts have entered into a number of project grant contracts as at March 31, 2013 for the future funding of research projects to be completed subsequent to the year end.

These contractual obligations are funded in installments and payments are due based on conditions included in the contract being satisfied. As such, no liability has been accrued in the financial statements as the Trusts are not liable until these conditions have been met.

The research project contractual obligations of Northern Boundary are $1,037,127 (March 31, 2012 - $626,826) and of the Southern Boundary are $1,073,452 (March 31, 2012 - $507,496) as at March 31, 2013.

5. Minimum fund balances:

In line with Chapter IX – 'Financial Regulations' Section F of the Pacific Salmon Commission By-laws, the total expenditures of the Trusts should not exceed the total income from the Principal. The Principal was the amount provided at the point of constitution of the Trusts and was US $74,837,400 from the Government of the United States of America and CAD $250,000 from the Government of Canada in the Northern Boundary and US $64,902,400 from the Government of the United States of America and CAD $250,000 from the Government of Canada in the Southern Boundary. As at March 31, 2013, the Northern and Southern Funds were in excess of the minimum balances.

6. Administrative services:

The Pacific Salmon Commission ("Commission") charges fees for administrative services to the Trusts representing an allocation of Commission salaries and benefits expenses incurred on behalf of the Trusts.

During the fiscal year ended March 31, 2013, the Trusts' provided funding for projects totaling $2,074,543 (March 31, 2012 - $2,356,410; April 1, 2011 - $2,807,915) to the Commission.

As at March 31, 2013, the Trusts have a payable to the Commission of $39,512 (March 31, 2012 - net receivable of $62,239; April 1, 2011 - payable of $157,578).

7. Financial instruments:

(a) Market/currency risk:

The Fund is exposed to market and currency risk on its investments as a result of fluctuations in factors such as stock prices, interest rates, foreign exchange rates, and commodity prices. Management invests in a diverse investment portfolio, and engages a third party investment manager to mitigate the overall risk profile of its investments.

(b) Credit risk:

Credit risk is the risk that a third party to a financial instrument might fail to meet its obligations under the terms of the financial instrument. For cash and cash equivalents, investments, due from Pacific Salmon Trusts, and interest receivable, the Trusts' credit risk is limited to the carrying value on the statement of financial position. Management does not believe that the Trusts are subject to any significant concentration of credit risk.

(c) Liquidity risk:

Liquidity risk is the risk that an entity will not be able to meet its obligations associated with financial liabilities.

The Trusts manage liquidity risk by maintaining adequate cash and investment revenues. The Trusts monitor the cash flows in to ensure that the fund balances are maintained at a sufficient level in line with the Treaty.

Appendices

Appendix A

Northern Fund Projects for 2012/2013

Description	Proponent	Org	Date of Record Area	2012 CAN $	2012 US $
Ongoing Enhancement					
2011 Tatsamenie Lake Sockeye Fry Extended Rearing	Mercer	B. Mercer & Associates	TBR	$ 41,969	$ 41,969
Lakelse Sockeye Recovery Program: Fry Outplant Project - Year 5	Miller	DFO	NBC	$ 94,000	$ 94,000
Tahltan Lake Egg-take: 2012	Cotlins	DFO	TBR	$ 80,000	$ 80,000
New Enhancement					
Snootli Hatchery Chinook Augmentation (Year 5 of 5)	Holland	DFO	NBC	$ 48,360	$ 48,360
Water Intake System Improvements – Sitka Sound Science Center SJ Hatchery	Garrison	Sitka Sound Science Center	SEAK	$ 130,000	$ 130,000
Tatsamenie Lake Smolt project	Mercer	B. Mercer & Associates	TBR	$ 29,038	$ 29,038
Cranberry River Fishway Project – Stage 1: Engineering / Environmental Feasibility St	Cleveland	Gitanyow Fisheries Authority	NBC	$ 40,000	$ 40,000
Stikine Enhancement Feasibility Study	Etherton	Tahltan Fisheries	TBR	$ 95,108	$ 95,108
Tuya smolt sampling	Finnigan	Tahltan Fisheries	TBR	$ 13,021	$ 13,021
King Salmon Lake - Sockeye enhancement project	Gordon	Taku River Tlingit Fisheries	TBR	$ 25,568	$ 25,568
Evaluation of the Gitga'at First Nation's Salmon Enhancement Programs	Picard	Hartley Bay Band Council	NBC	$ 44,849	$ 44,849
Ongoing Habitat					
Lakelse Sockeye Recovery Program: Williams Creek Upper Spawning Channel	Miller	DFO	NBC	$ 42,000	$ 42,000
New Habitat					
Sockeye Habitat Evaluation of the Morrison Arm of Lake Babine	Lamerouille	Skeena Fisheries Commission	NBC	$ 42,366	$ 42,366
Remediation Of A Salmon Blockage On The Kwinageese River	Stewart	Nisga'a Lisims Government	NBC	$ 84,804	$ 84,804
Scully Creek Ground Water Channel Improvements	North	Graywolf Resources	NBC	$ 133,100	$ 133,100
Ongoing Information					
Forecasting Southeast Alaska pink salmon harvest from juvenile salmon data: extens	Orsi	NOAA	SEAK	$ 49,790	$ 49,790
Stock composition of Stikine and Taku river fisheries - sample collection	Boyce	DFO	TBR	$ 47,900	$ 47,900
Stikine River Coded Wire Tagging Augmentation, 2012	Etherton	DFO	NBC	$ 14,400	$ 14,400
Genetic changes associated with in-basin supplementation of a population of sockeye	Joyce	NOAA	SEAK	$ 40,000	$ 40,000
Northern and Transboundary sockeye matched scale-tissue sampling	Reynolds	ADFG	SEAK	$ 189,596	$ 189,596
BC North Coast Lakes Hydroacoustic Survey - Year 3	Gottesfeld	Skeena Fisheries Commission	NBC	$ 32,567	$ 32,567
Northern Boundary Area Sockeye Salmon Genetic Stock Identification for 2011	Guyon	NOAA	SEAK	$ 201,500	$ 201,500
Transboundary Chinook and Sockeye Salmon DNA Stock ID Baseline Sample Collec	Waugh	DFO	TBR	$ 64,600	$ 64,600
Taku River Coho Salmon Escapement and Smolt Tagging Augmentation	Boyce	DFO	TBR	$ 47,565	$ 47,565
Skeena River Recreational Chinook Creel Survey	English	LGL Ltd	NBC	$ 108,772	$ 108,772
New Information					
Northern Boundary area summer chum salmon monitoring	Pelton	ADFG	SEAK	$ 39,581	$ 39,581
Northern British Columbia Winter Chinook Troll stock composition from DNA	Kalinski	DFO	NBC	$ 22,000	$ 22,000
Analysis of Stikine River coho salmon radioteleme try data collected in 2006	Etherton	DFO	TBR	$ 40,000	$ 40,000
Slamgeesh Camp infrastructure improvements	Gottesfeld	Gitwaan Watershed Authorities	NBC	$ 28,061	$ 28,061
Genetic stock identification of District 108 and 106 sockeye, 2012	Gilk-Baumer	ADFG	SEAK	$ 165,300	$ 165,300
Genetic stock identification of District 111 sockeye, 2012	Gilk-Baumer	ADFG	SEAK	$ 79,800	$ 79,800
2012 Alsek Sockeye Run Reconstruction Using GSI	Waugh	DFO	TBR	$ 12,750	$ 12,750
Village Creek Counter Replacement – Alsek River 2012	Waugh	DFO	TBR	$ 25,000	$ 25,000
Video Capture of Recreational Fishing Effort in Area 2W to Improve Creel Estimates a	Rpotjaric	Haida Fisheries Program	NBC	$ 34,795	$ 34,795
Nass River Test Fishery Fishwheel Capital Replacements	Stewart	Nisga'a Lisims Government	NBC	$ 27,162	$ 27,162
McLoughlin Creek Enhanced Chum Assessment	Willis	DFO	NBC	$ 7,570	$ 7,570
Alsek River - Reconnaissance surveys for identification of escapement monitoring site	Labelle	DFO	TBR	$ 50,000	$ 50,000
Southeast Alaska Chinook Salmon Stock Assessment	Jones	ADFG	SEAK	$ 160,000	$ 160,000
Area 3 Wild Chum Assessment (Commercial fishery otoliths)	Davies	DFO	NBC	$ 73,310	$ 73,310
Babine Lake Productive Capacity, Ecological Status and Juvenile Sockeye Abundanc	Selbie	DFO	NBC	$ 177,568	$ 177,568
			2012 Total	$	2,742,691

Appendix B

Southern Fund Projects for 2012/2013

Goal	Obj	Description	Proponent	Org	Area *	[illegible] Req	[illegible] Req	[illegible] Total Req
		Ongoing Goal 1 - Improve the Management of Fisheries Relevant to the Pacific Salmon Treaty						
G1	1.a	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
G1	2.a	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
G1	2.a	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
G1	2.a	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
								$ [illegible]
		New Goal 1 - Improve the Management of Fisheries Relevant to the Pacific Salmon Treaty						
G1	1.a	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
G1	2.a	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
G1	3.a	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
G1	3.b	[illegible]	[illegible]	[illegible]	[illegible]		$ [illegible]	$ [illegible]
G1	3.a	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
G1	3.c	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
G1	4.a	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
G1	4.a	[illegible]	[illegible]	[illegible]	[illegible]		$ [illegible]	$ [illegible]
G1	4.b	[illegible]	[illegible]	[illegible]	[illegible]		$ [illegible]	$ [illegible]
G1	4.b	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
								$ [illegible]
		Ongoing Goal 2 - Address Priority Stocks of Interest						
G2	6.a	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
G2	7.c	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
G2	7.c	[illegible]	[illegible]	[illegible]	[illegible]		$ [illegible]	$ [illegible]
								$ [illegible]
		New Goal 2 - Address Priority Stocks of Interest						
G2	6.a	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
G2	6.c	[illegible]	[illegible]	[illegible]	[illegible]		$ [illegible]	$ [illegible]
G2	6.c	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
G2	6.c	[illegible]	[illegible]	[illegible]	[illegible]		$ [illegible]	$ [illegible]
G2	7.c	[illegible]	[illegible]	[illegible]	[illegible]		$ [illegible]	$ [illegible]
								$ [illegible]
		Ongoing Goal 3 - Improve Collaboration Between the Parties, Relevant Agencies and Stakeholders						
G3	n/a	[illegible]						$ -
								$ -
		New Goal 3 - Improve Collaboration Between the Parties, Relevant Agencies and Stakeholders						
G3	8.a	[illegible]	[illegible]	[illegible]	[illegible]		$ [illegible]	$ [illegible]
G3	8.a	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
								$ [illegible]
		Ongoing Goal 4 - Gain Better Understanding and Incorporate Ecosystem Factors into Underlying Science and Management Processes						
G4	n/a	[illegible]						$ -
								$ -
		New Goal 4 - Gain Better Understanding and Incorporate Ecosystem Factors into Underlying Science and Management Processes						
G4	9.a	[illegible]	[illegible]	[illegible]	[illegible]		$ [illegible]	$ [illegible]
G4	9.b	[illegible]	[illegible]	[illegible]	[illegible]	$ [illegible]		$ [illegible]
								$ [illegible]

[illegible] $ [illegible]
[illegible] $ [illegible]
[illegible] $ [illegible]

* [illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Appendix C

Appointment of Officers for 2012/2013

Effective December 1, 2012 a new slate of officers for the Pacific Salmon Commission was identified as follows:

OFFICE	COUNTRY	REPRESENTATIVE
Commission Chair	Can	Susan Farlinger
Commission Vice-Chair	U.S.	Dave Bedford
Fraser River Panel Chair	Can	Barry Rosenberger
Fraser River Panel Vice-Chair	U.S.	Lorraine Loomis
Northern Panel Chair	Can	Mel Kotyk
Northern Panel Vice-Chair	U.S.	Gordy Williams
Southern Panel Chair	Can	Andrew Thomson
Southern Panel Vice-Chair	U.S.	John Long
Transboundary Panel Chair	Can	Steve Grinyk
Transboundary Panel Vice-Chair	U.S.	John Clark
Stan. Comm. on F&A - Chair	Can	Paul Macgillivray
Stan. Comm. on F&A - Vice-Chair	U.S.	Ron Athey
Stan. Comm. on Scientific Cooperation - Chair	Can	Laura Richards
Stan. Comm. on Scientific Cooperation - Vice-Chair	U.S.	David Hankin
Technical Committee on Data Sharing - Co-Chair	Can	Chuck Parken
Technical Committee on Data Sharing - Co-Chair	U.S.	George Nandor
Fraser River Panel Technical Committee - Co-Chair	Can	Ann-Marie Huang
Fraser River Panel Technical Committee - Co-Chair	U.S.	Gary Graves
Northern Boundary Technical Committee - Co-Chair	Can	Dave Peacock
Northern Boundary Technical Committee - Co-Chair	U.S.	Glen Oliver
Transboundary Technical Committee - Co-Chair	Can	Steve Smith
Transboundary Technical Committee - Co-Chair	U.S.	Scott Kelley
Enhancement Subcommittee of the Transboundary Technical Committee - Co-Chair	Can	Sean Collins
Enhancement Subcommittee of the Transboundary Technical Committee - Co-Chair	U.S.	Ron Josephson
Joint Chinook Interface Group Co-Chair	Can	Paul Sprout
Joint Chinook Interface Group Co-Chair	U.S.	Dave Bedford
Joint Technical Committee on Chinook - Co-Chair	Can	Chuck Parken
Joint Technical Committee on Chinook - Co-Chair	U.S.	John Carlile
Joint Technical Committee on Coho - Co-Chair	Can	Arlene Tompkins
Joint Technical Committee on Coho - Co-Chair	U.S.	Gary Morishima
Joint Technical Committee on Chum - Co-Chair	Can	Peter van Will
Joint Technical Committee on Chum - Co-Chair	U.S.	Ed Bowers
Joint Technical Committee on Habitat and Restoration Co-Chair	Can	Melody Farrell
Joint Technical Committee on Habitat and Restoration Co-Chair	U.S.	Thom Hooger
Selective Fishery Evaluation Committee - Co-Chair	Can	Gayle Brown
Selective Fishery Evaluation Committee - Co-Chair	U.S.	Gary Morishima

Appendix D

Approved Budget FY [illegible]

PACIFIC SALMON COMMISSION

APPROVED BUDGET [illegible]

I	INCOME	£'000
A	Contribution from Canada	[illegible]
B	Contribution from U.S.	[illegible]
	Sub-total	[illegible]
C	Carry-over from [illegible]	[illegible]
D	Interest	[illegible]
E	Other income	[illegible]
F	Total Income	[illegible]

I	EXPENDITURE	
A	1. Permanent Salaries and Benefits	[illegible]
	2. Temporary Salaries and Benefits	[illegible]
	3. Total Salaries and Benefits	[illegible]
B	Travel	[illegible]
C	Rents, Communications, Utilities	[illegible]
D	Printing and Publications	[illegible]
E	Contractual Services	[illegible]
F	Supplies and Materials	[illegible]
G	Equipment	[illegible]
H	Total Expenditures	[illegible]
J	BALANCE (SHORTFALL)	[illegible]

Appendix C

Secretariat Report to the Standing Committee on Finance and Administration on selected grant administration issues

Revised February 14, 2013

Background

The Commission's independent audit firm, PKF/2011/2012 raised potential weaknesses in the Secretariat's accounting departments. In particular, the auditor commented:

> In recent years, the Commission has undertaken an increasing amount of administrative functions on behalf of other agencies. Given the small size of the Commission's accounting department, processing an amount of administrative responsibilities undertaken by the Commission within also processing the resources available has the potential to introduce the risk of error on the financial statements. We recommend that management ensure it sufficient resources have been allocated to the administrative function in order to ensure that adequate internal controls to prevent, detect and correct potential misstatements in the financial reporting are maintained. [OMIT] audit findings for the year ending March 31, 2012, page 14.

In response, the Committee members asked the Secretariat [a deadline 2012] to compile a list of grant administration duties and their ostensible functions for consideration. This report responds to that request and is intended to stimulate discussion among Commissioners and the Secretariat about appropriate workloads and cost recovery mechanisms.

1. Northern Boundary Transformation, Rivers Restoration and Enhancement Fund ("Northern Fund") and Southern Boundary Restoration and Enhancement Fund ("Southern Fund")
   a. As per Financial Regulation 11(b), the Secretariat has charged administrative fees to the Northern and Southern Funds since their inception. In addition to paying for professional fund management services from third parties, these fees cover the Secretariat's costs for staff time, salaries and benefits for Fund Managers, Fund Assistant, and auditors, fund committee members' travel, and capital purchases associated with the two endowment funds.
   b. A recent review of fund auditors' staff time indicated that these Secretariat staff members contribute some 42 days worth cost to endowment fund support: Executive Director, Controller, Accountant, Accounting Assistant, Meeting Planner, Receptionist, and IT Manager.
   c. Timeline: there is no proposed sunset date for Secretariat support for the endowment funds.

2. Lakeus Rivers Restoration and Enhancement Fund ("Lakeus Fund")
   a. In 2012, the Secretariat charged the Financial Regulation 11 cost recovery administrative fees for the Lakeus Fund.
   b. Since 2012, the Fund Manager and Fund Assistant have devoted some 45 days worth cost from supporting the Northern and Southern Funds to supporting the Lakeus Fund (liaising with applicants and grantees, issuing agreements, updating project status, etc.).
   c. PKF Financial Rules dictate that the Treasurer's Secretary is responsible for maintaining proper fund records for the Funds. The Controller, Accountant, and Accounting Assistant support this role through Fund administration, budgeting, and accounting.
   d. In accordance with FA Sec. 4(b)(iv), administrative fees for the Fund are drawn from the fund itself, cost and recorded by the Secretariat as appropriate.
   e. Timeline: There is no proposed sunset date for Secretariat support for the Lakeus Fund.

[redacted]

[redacted]

[redacted]

Appendix F

Pacific Salmon Commission Secretariat Staff as of March 31, 2013

EXECUTIVE OFFICE

John Field
Executive Secretary

Tom Tarbu
Records Administrator/Librarian

Vicki Ryall
Meeting Planner

Kimberly Bartlett
Secretary

Sandie Gibson
Information Technology Manager

FINANCE & ADMINISTRATION

Kenneth N. Mudford
Controller

Bonnie Dalziel
Accountant

Angus Mackay
Fund Coordinator

Victor Kuong
Program Assistant Restoration & Enhancement Funds

FISHERY MANAGEMENT

Mike Lapointe
Chief Biologist

Catherine Michielsens
Quantitative Scientist

Holly Amore
Scale Lab Assistant

Murray Hague
Quantitative Biologist

Catherine Bull
Scale Lab Assistant (term)

Ian Guthrie
Head, Stock Identification Group

Jim Cave
Head, Stock Monitoring Group

Steve Latham
Stock Identification Biologist, Sockeye

Keith Forrest
Test Fishing Biologist

Bruce White
Stock Identification Biologist, Pinks

Yunbo Xie
Hydroacoustics Scientist

Erica Jenkins
Salmon Technician

Fiona Martens
Senior Hydroacoustic Technician

Moreau Forrest
Senior Scale Analyst

Jacqueline Nelitz
Hydroacoustic Technician

Julie Sellars
Assistant Scale Analyst

Mike Bartel-Sawatsky
Hydroacoustic Technician

Appendix G

Membership Lists for Standing Committees, Panels, Joint Technical Committees and other Appointments as of March 31, 2013

1. STANDING COMMITTEE ON FINANCE AND ADMINISTRATION

Mr. Paul Macgillivray (Chair)
Ms. Lisa Kerr
Ms. Chantal Lamadeleine
Ms. Allison Webb
Ms. Heather Wood

Mr. W. Ron Allen(Vice-Chair)
Mr. David Bedford
Mr. Roy Elicker
Ms. Natalie Howard
Mr. Mike Matylewich
Ms. Cheryl Ryder

Staff

Mr. John Field (ex. Officio)

Editorial Board

Ms. Heather Wood

Ms. Cheryl Ryder

Staff

Mr. John Field (ex. Officio)

2. FRASER PANEL

Ms. Jennifer Nemer (Chair)
Mr. Chris Ashton
Mr. Mike Griswold
Chief Ken Malloway
Mr. Rob Morley
Mr. John Murray

Ms. Lorraine Loomis (Vice-Chair)
Mr. Kyle Adicks
Mr. Robert F. Kehoe
Mr. Tim Tynan

FRASER RIVER PANEL - ALTERNATES

Mr. Les Jantz
Mr. Brent McCallum
Mr. Les Rombough
Mr. Peter Sakich
Mr. Marcel Shepert

Mr. Ronald G. Charles
Mr. Jack R. Giard
Ms. Peggy Mundy
Mr. Steve Thiesfeld

3. SOUTHERN PANEL

Mr. Andrew Thomson (Chair)
Mr. Don Hall
Mr. Paul Kershaw
Mr. John Legate
Mr. Jeremy Maynard
Mr. Laurie Milligan

Mr. John Long (Vice-Chair)
Ms. Susan Bishop
Mr. Burnie Bohn
Mr. Mark Newell
Mr. Joseph Oatman
Mr. Terry Williams

SOUTHERN PANEL - ALTERNATES

Mr. Rod Cootes
Ms. Brigid Payne
Mr. Errol Sam
Ms. Marilyn Scanlan
Mr. Gord Sterritt
Mr. Phil Young

Mr. Larry Carpenter
Mr. Edward Johnstone
Mr. Chris Kern
Mr. Joseph C. Peters
Dr. Brad Thompson
Mr. Ron Warren

4. NORTHERN PANEL

Mr. Mel Kotyk (Chair)
Mr. Chris Barnes
Mr. Chris Cue
Mr. Bill de Greef
Mr. John McCulloch
Ms. Joy Thorkelson

Mr. Gordon Williams (Vice-Chair)
Mr. William F. Auger
Mr. Robert D. Mecum
Mr. Howard Pendell
Mr. Russell Thomas
Mr. Robert M. Thorstenson

NORTHERN PANEL - ALTERNATES

Mr. Dale Gueret
Mr. Rick Haugan
Mr. G. Knox
Mr. Wilfred McKenzie
Chief Harry Nyce Sr.
Mr. Tom Protheroe

Mr. John Carle
Mr. Mitchell Eide
Mr. Arnold Enge
Mr. Brian Frenette
Dr. Peter Hagen
Mr. Dennis Longstreth

5. TRANSBOUNDARY PANEL

Mr. Steve Gotch (Chair)
Ms. Cheri Frocklage
Ms. Louise Gordon
Ms. Jennifer Gould
Mr. Chris Kendel
Mr. Wolfe Riedl
Ms. Linaya Workman

Dr. John H. Clark (Vice-Chair)
Mr. James Becker
Mr. Rod Brown
Mr. Richard Davis
Mr. Arnold Enge
Mr. Gary Gray
Dr. Peter Hagen
Ms. Dale A. Kelley

6. STANDING COMMITTEE ON SCIENTIFIC COOPERATION

Dr. Laura Richards (Chair)
Mr. Mark Saunders
Dr. David Hankin (Vice-Chair)
Mr. Alex Wertheimer

7. NORTHERN FUND COMMITTEE

Mr. Mel Kotyk (Co-Chair)
Mr. Steve Gotch
Mr. Tom Protheroe
Mr. David Bedford (Co-Chair)
Mr. Robert Mecum

8. SOUTHERN FUND COMMITTEE

Mr. Andrew Thomson (Co-Chair)
Dr. Don Hall
Mr. Mike Griswold
Mr. Larry Peck (Co-Chair)
Mr. McCoy Oatman
Mr. Larry Rutter

9. JOINT TECHNICAL COMMITTEE ON CHINOOK

Mr. Chuck Parken (Co-Chair)
Mr. Richard Bailey
Dr. Gayle Brown
Mr. Roger Dunlop
Ms. Diana Dobson
Ms. Dawn Lewis
Ms. Teresa Ryan
Mr. Julian Sturhahn
Dr. Arlene Tompkins
Dr. Antonio Velez-Espino
Mr. Ivan Winther
Mr. Howie Wright
Mr. John Carlile (Co-Chair)
Dr. Marianna Alexandersdottir
Dr. David Bernard
Mr. Ryan Briscoe
Dr. John H. Clark
Mr. Ethan Clemons
Mr. Tim Dalton
Ms. Danielle Evenson
Mr. Gary R. Freitag
Mr. Andrew Gray
Mr. Edgar Jones
Dr. Robert Kope
Mr. Larrie LaVoy
Ms. Marianne McClure
Mr. Peter McHugh
Mr. Scott McPherson
Dr. Gary S. Morishima
Dr. Kristen Ryding
Mr. Rishi Sharma
Ms. Pattie Skannes
Mr. William Templin
Mr. Alex C. Wertheimer
Mr. Eric Volk
Mr. Henry J. Yuen

10. JOINT TECHNICAL COMMITTEE ON COHO

Dr. Arlene Tompkins (Co-Chair)
Mr. Roger Dunlop
Mr. Peter Nicklin
Mr. Joel Sawada

Dr. Gary S. Morishima (Co-Chair)
Ms. Carrie Cook-Tabor
Mr. Craig Foster
Mr. Jeff Haymes
Mr. Diego Holmgren
Dr. Peter W. Lawson
Mr. James F. Packer
Mr. Bill Patton
Ms. Laurie Weitkamp
Ms. Mara Zimmerman

(Northern Coho)

Dr. John H. Clark
Ms. Michele Masuda
Mr. Leon D. Shaul

11. JOINT TECHNICAL COMMITTEE ON CHUM

Mr. Pieter Van Wo:; (Co-Chair)
Mr. John R. Candy
Ms. Kim Charlie
M's. Marla Maxwell
Mr. Joe Tadey

Mr. Jay Zischke (Co-Chair)
Ms. Amy Seiders
Ms. Maureen Small
Dr. Gary Winans

12 JOINT TECHNICAL COMMITTEE ON HABITAT AND RESTORATION

Ms. Melody Farrell (Co-Chair)
Mr. Matt Foy
Mr. Allen Gottesfeld
Dr. Peter Tschaplinski
Mr. Howie Wright

Mr. Thom Hooper (Co-Chair)
Mr. Kim Jones
Mr. Jeff Nichols
Mr. Phil Rogers

13. TECHNICAL COMMITTEE ON DATA SHARING

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Ms. Kathryn Fraser
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Mr. P. Brodie Cox
Mr. Ron Josephson
Mr. Mike Matylewich
Dr. Gary S. Morishima
Mrs. Amy Seiders

Working Group on Data Standards

Ms. Kathryn Fraser
Ms. Brenda Ridgway

Mr. Timothy Frawley
Dr. H. Mark Engelking
Mr. Gilbert Lensegrav
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